BEFORE THE ARIZONA CORPORATION CO

ORIGINAL

COMMISSIONERS
BOB STUMP - Chairman
GARY PIERCE
BRENDA BURNS
BOB BURNS
SUSAN BITTER SMITH

IN THE MATTER OF THE APPLICATION OF VERDE SANTA FE WASTEWATER CO., INC. AN ARIZONA CORPORATION, FOR A DETERMINATION OF THE FAIR VALUE OF ITS UTILITY PLANTS AND PROPERTY AND FOR INCREASES IN ITS WASTEWATER RATES AND CHARGES FOR UTILITY SERVICE BASED THEREON.	DOCKET NO. SW-03437A-13-0292 **STAFF NOTICE OF FILING DIRECT TESTIMONY**

The Utilities Division ("Staff") of the Arizona Corporation Commission ("Commission") hereby files the Direct Testimony of Staff witnesses Crystal S. Brown, Katrin Stukov, and John A. Cassidy in the above-captioned matter.

RESPECTFULLY SUBMITTED this 24th day of February, 2014.

Robin R. Mitchell, Attorney
Legal Division
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007
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Original and thirteen (13) copies of the foregoing filed this 24th day of February, 2014 with:

Docket Control
Arizona Corporation Commission
1200 West Washington Street
Phoenix, AZ 85006

Copy of the foregoing mailed and/or emailed
this 24th day of February, 2014 to:

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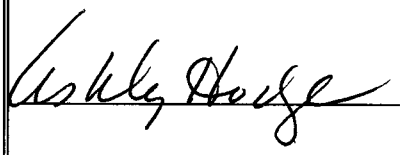

BEFORE THE ARIZONA CORPORATION COMMISSION

BOB STUMP
Chairman
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Commissioner
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IN THE MATTER OF THE APPLICATION OF VERDE SANTA FE WASTEWATER CO., INC., AN ARIZONA CORPORATION, FOR A DETERMINATION OF THE FAIR VALUE OF ITS UTILITY PLANTS AND PROPERTY AND FOR INCREASES IN ITS WASTEWATER RATES AND CHARGES FOR UTILITY SERVICE BASED THEREON.	)	DOCKET NO. W-03437A-13-0292

DIRECT

TESTIMONY

OF

CRYSTAL S. BROWN

PUBLIC UTILITIES ANALYST V

UTILITIES DIVISION

ARIZONA CORPORATION COMMISSION

FEBRUARY 24, 2014

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ATTACHMENT

SCHEDULES

EXECUTIVE SUMMARY
VERDE SANTA FE WASTEWATER CO., INC.
DOCKET NO. W-03437A-13-0292

Verde Santa Fe Wastewater Company, Inc. ("Verde Santa Fe" or "Company") is an Arizona Class C utility engaged in the business of providing wastewater service in portions of Yavapai, Arizona. Verde Santa Fe serves approximately 950 customers.

The Company proposes a $65,213, or 13.60 percent revenue increase from $479,551 to $544,764. The proposed revenue increase would produce an operating income of $46,347 for an 11.00 percent rate of return on an original cost rate base ("OCRB") of $421,336. The Company's proposed rates would increase the typical residential bill from $40.00 to $45.68, for an increase of $5.68 or 14.2 percent.

Staff recommends a $25,400 or 5.30 percent revenue increase from $479,551 to $504,951. Staff's recommended revenue increase would produce an operating income of $40,448 for a 9.6 percent rate of return on an OCRB of $421,336 as shown on Schedule CSB-1. Staff's recommended rates would increase the typical residential bill from $40.00 to $42.12, for an increase of $2.12 or 5.3 percent.

INTRODUCTION

Q. Please state your name, occupation, and business address.

A. My name is Crystal S. Brown. I am a Public Utilities Analyst V employed by the Arizona Corporation Commission ("Commission") in the Utilities Division ("Staff"). My business address is 1200 West Washington Street, Phoenix, Arizona 85007.

Q. Briefly describe your responsibilities as a Public Utilities Analyst V.

A. I am responsible for the examination and verification of financial and statistical information included in utility rate applications. In addition, I develop revenue requirements, prepare written reports, testimonies, and schedules that include Staff recommendations to the Commission. I am also responsible for testifying at formal hearings on these matters.

Q. Please describe your educational background and professional experience.

A. I received a Bachelor of Science Degree in Business Administration from the University of Arizona and a Bachelor of Science Degree in Accounting from Arizona State University.

Since joining the Commission in August 1996, I have participated in numerous rate cases and other regulatory proceedings involving electric, gas, water, and wastewater utilities. I have testified on matters involving regulatory accounting and auditing. Additionally, I have attended utility-related seminars sponsored by the National Association of Regulatory Utility Commissioners ("NARUC") on ratemaking and accounting designed to provide continuing and updated education in these areas.

Q. What is the scope of your testimony in this case?

A. I am presenting Staff's analysis and recommendations in the areas of rate base and operating revenues, expenses, and rate design regarding the Verde Santa Fe Water Company, Inc. ("Verde Santa Fe" or "Company") application for a permanent rate increase. Staff witness, John Cassidy, is presenting Staff's cost of capital recommendations. Staff witness, Katrin Stukov, is presenting Staff's engineering analysis and recommendations.

Q. What is the basis of your recommendations?

A. I performed a regulatory audit of the Company's application to determine whether sufficient, relevant, and reliable evidence exists to support the Company's requested rate increase. The regulatory audit consisted of examining and testing the financial information, accounting records, and other supporting documentation and verifying that the accounting principles applied were in accordance with the Commission-adopted NARUC Uniform System of Accounts ("USoA").

BACKGROUND

Q. Please provide a brief description of Verde Santa Fe and the service it provides.

A. Verde Santa Fe is an Arizona Class C utility engaged in the business of providing wastewater service in portions of Yavapai County, Arizona. Verde Santa Fe serves approximately 950 customers. Verde Santa Fe's current rates were approved in Decision No. 60779, dated April 8, 1998.

Q. What are the primary reasons for Verde Santa Fe's requested permanent rate increase?

A. According to the Company, the primary reasons for the requested increase is to recover increased operating expenses, to earn an 11 percent rate of return and to address the effluent rates that the golf course pays.

CONSUMER SERVICE

Q. Please provide a brief history of customer complaints received by the Commission regarding Verde Santa Fe.

A. A review of the Commission's Consumer Services database from January 1, 2011 to February 10, 2014 revealed the following:

- 2011 to 2014: Zero Complaints;
- 2013: One opinion was filed opposing the rate case.

COMPLIANCE

Q. Please provide a summary of the compliance status of Verde Santa Fe.

A. A check of the Compliance database indicates that there are currently no delinquencies for Verde Santa Fe.

SUMMARY OF PROPOSED REVENUES

Q. Please summarize the Company's filing.

A. The Company proposes a $65,213, or 13.60 percent revenue increase from $479,551 to $544,764. The proposed revenue increase would produce an operating income of $46,347 for an 11.00 percent rate of return on an original cost rate base ("OCRB") of $421,336. The Company's proposed rates would increase the typical residential bill from $40.00 to $45.68, for an increase of $5.68 or 14.20 percent.

Q. Please summarize Staff's recommended revenue.

A. Staff recommends a $25,400 or 5.30 percent revenue increase from $479,551 to $504,951. Staff's recommended revenue increase would produce an operating income of $40,448 for a 9.6 percent rate of return on an OCRB of $421,336 as shown on Schedule CSB-1. Staff's recommended rates would increase the typical residential bill from $40.00 to $42.12, for an increase of $2.12 or 5.3 percent.

Q. What test year did Verde Santa Fe utilize in this filing?

A. Verde Santa Fe's test year is based on the twelve months ended December 31, 2012.

Q. Please summarize Staff's rate base and operating income adjustments for Verde Santa Fe.

A. Staff made no adjustments to rate base. Staff's adjustments to operating revenue and expenses address the following:

Operating Income Adjustments

Salaries and Wages, Directors – This adjustment decreases salaries and wages expense by $18,529 to reflect Staff's calculation of a reasonable level of salary expense for the Company's three directors.

Rents Expense – This adjustment decreases rents expense by $11,256 in order to be consistent with the NARUC Guidelines for Cost Allocations and Affiliate Transactions which prescribe that the use of assets provided by a non-regulated affiliate should be at the lower of fully allocated cost or prevailing market prices.

Property Tax Expense – This adjustment decreases property tax expense by $1,059 to reflect Staff's calculation of the Company's property tax expense.

Income Tax Expense – This adjustment increases income tax expenses by $6,351 to reflect the income tax calculation on Staff's adjusted test year operating income.

RATE BASE

Fair Value Rate Base

Q. Did the Company prepare schedules showing the elements of Reconstruction Cost New Rate Base?

A. No, the Company did not. The Company's filing treats the OCRB the same as the fair value rate base.

Rate Base Summary

Q. Please summarize Staff's recommendation for Verde Santa Fe's rate base shown on Schedules CSB-3 and CSB-4.

A. Staff audited the Company's rate base and found that the amounts reported therein were supported with adequate cost documentation. Therefore, Staff recommends a rate base of $421,336 which is the same as the Company's proposed rate base.

OPERATING INCOME

Operating Income Summary

Q. What are the results of Staff's analysis of test year revenues, expenses and operating income?

A. As shown on Schedules CSB-5 and CSB-6, Staff's analysis resulted in test year revenues of $479,551, expenses of $459,007 and an operating income of $20,544.

Operating Income Adjustment No. 1 – Salaries and Wages

Q. What is the Company proposing for employee salary and wages expense?

A. The Company is proposing $31,683 which represents stipends paid to three directors (CSB 2.11) during the test year. Stipends are a form of salary.

Q. Does the Company have any employees overseen by the three directors?

A. No, according to the Company's response to data request CSB 2.11, the Company has no employees. Verde Santa Fe contracts with businesses that specialize in managing and operating water and wastewater companies in order to provide service to its customers.

Q. Are the contract services providers experienced, well qualified, and require little, if any, oversight?

A. Yes. Verde Santa Fe contracts with Pivotal Utility Management, LLC ("Pivotal") to provide management and administrative services. It contracts with A Quality Water Company to provide operations services. During the test year, Verde Santa Fe paid $215,254 for management and operations contractual services (CSB 2.15):

Amount Verde Santa Fe Paid to Contract Service Providers In Test Year		
Pivotal (An affiliate)	Management & Admin.	$121,054
A Quality Water Co.	Operations	$ 94,200
		$215,254

Q. Are the director salaries supported by time sheets?

A. No. The directors' salaries are not supported by time sheets (CSB 2.11).

Q. What are Staff's concerns about the hours and/or rates reflected in the proposed director salaries?

A. Staff has several concerns. Staff is concerned that some of the work reflected in the cost for the directors may be duplicative of work performed by the contract service providers and, as such, does not benefit customers. Pivotal manages and operates several companies (see Attachment A) which includes Payson Water Company. Staff is concerned that some of the time reflected in the cost may not be for work performed solely for Verde Santa Fe and, therefore, is over-stated.

Further, Staff notes that in Pima Utility Company's last rate case (Docket No. SW-02199A-11-0330), the Commission included the cost of only one director in operating expenses, as compared to the three directors that Verde Santa Fe is proposing, in its operating expenses. Further still, Staff notes that Pivotal proposed no costs for directors in Payson Water Company's rate case that is currently before the Commission (Docket No. W-03514A-13-0111). Therefore, Staff is concerned that including stipends for the number of directors proposed by Verde Santa Fe is excessive.

Q. Did Staff calculate a reasonable level of directors' salary expense to be used for ratemaking purposes?

A. Yes. Staff calculated $13,154 for the directors' salary expense. The amount was calculated by multiplying an hourly rate of $45.67 by 288 total annual hours. Staff will discuss how each component of the calculation was derived.

Q. How did Staff determine the $45.67 hourly rate?

A. Staff utilized a director salary of $95,000. This amount was slightly higher than that used for the director in the Pima Utility case that was mentioned earlier. The resulting hourly rate is $45.67 ($95,000 / 2,080 annual hours).

Q. How did Staff determine the 288 annual hours?

A. Staff's salary expense calculation recognizes that there are no time sheets for the directors and that Pivotal owns and/or operates approximately 10 different companies (CSB 2.9); that Verde Santa Fe has no employees the directors would need to oversee; that Verde Santa Fe is managed and operated by well qualified contract service providers; that the directors may occasionally perform other miscellaneous activities but that the primary activity that directors would provide is long-term strategic planning; and that long-term strategic planning is not performed on a monthly basis. Taking into account the aforementioned, Staff estimated 8 hours a month for miscellaneous and strategic planning activities for each director. This equates to 24 hours per month for all directors which, in turn, equates to 288 total annual hours (24 hours per month x 12 months) for all directors.

Q. For future rate cases, does Staff recommend that Verde Santa Fe support directors salaries expense with time sheets or a time study with underlying time sheets.

A. Yes. Staff recommends that the Company maintain time sheets or a time study with underlying time sheets for the three directors in order to recover salaries expense for the directors in any future rate case.

Q. What is Staff's recommendation?

A. Staff recommends decreasing salaries and expense by $18,529 as shown on Schedules CSB-6 and CSB-7.

Operating Income Adjustment No. 2 – Rents Expense, Verde Santa Fe Expansion

Q. Is Verde Santa Fe affiliated with Pivotal?

A. Yes. Verde Santa Fe and Pivotal have the same owner, Jason Williamson.

Q. Are the rents that Verde Santa Fe pays to its unregulated affiliate, Pivotal, a related-party transaction?

A. Yes.

Q. What is a related party transaction?

A. In general, a related party transaction refers to a company and any other party with which the company may deal where one party has the ability to influence the other to the extent *that one party of the transaction may not pursue its own separate best interest.* It is not an arm's-length bargaining of parties of opposing interests.

Q. What equipment does Verde Santa Fe rent from Pivotal?

A. According to the Company's response to CSB 2.16, Verde Santa Fe leases the following equipment:

EQUIPMENT LEASED FROM AFFILIATE		
Quantity	**Description**	**Lessor's Cost**
1	Horizontal Cylindrical Fiberglass Sludge Holding Tank	$19,480
1	Vertical Cylindrical Chlorine Contact Tank	$12,377
1	Olympian D150PL 150kW Standby Generator	$48,572
1	Inline Franklin Miller SS6000 comminutor	$25,815
2	Horizontal Cylindrical Fiberglass Anoxic Holding Tanks	$44,656
2	Horizontal Cylindrical Fiberglass Aeration Tanks	$99,100
		$250,000

Q. What are the terms of the related party lease agreement?

A. The monthly lease amount is $2,587.95 or $31,055.40 annually for 10 years at which time Verde Santa Fe can buy the equipment at fair market value if it chooses or continue renting the equipment. The Company was in the seventh year[1] of the lease during the test year.

[1] The lease was signed on June 15, 2005.

Q. Are these terms consistent with the NARUC Guidelines for Cost Allocations and Affiliate Transactions?

A. No they are not. The NARUC Guidelines for Cost Allocations and Affiliate Transactions states that:

> Generally, the prices for services, products and use of assets provided by a non-regulated affiliate to a regulated affiliate should be at the lower of fully allocated cost or market value.

Q. Assuming that the Company had obtained Commission approval for a $250,000 loan to purchase rather than lease the plant, what does Staff estimate the annual cost to be?

A. Assuming a 20-year[2] $250,000 amortizing loan with a five percent interest rate[3], Staff estimates the annual cost to be $19,799 as compared to the $31,055 annual lease payment proposed by the Company. At the end of such a loan the assets would be owned and Verde Santa Fe would not be required to pay an additional acquisition fee.

Q. Has the Company indicated the terms associated with the development of its current lease agreement?

A. Yes. In response to Staff data request CSB 2.16 and CSB 3.5, the Company indicated that the lease was structured around a 10-year term, an initial asset investment of $250,000, and an assumed interest rate of approximately nine percent. The Company also provided a list of the underlying assets, which were provided through Pivotal, an affiliated Company. While the costs associated with the individual items are priced down to the dollar, the total of these six assets just happens to equal $250,000. See list on page nine of my testimony.

[2] Treatment and Disposal Equipment (Acct No. 380) have a 20 year useful life.
[3] Staff recognizes that if the Company had received a Commission-approved loan (rather than a lease) from the parent company, then Staff's recommended WACC (composed 100% of equity) would likely have been lower as the capital structure would have included $250,000 in debt.

Staff attempted to duplicate the resulting annualized lease payment based upon the lease terms provided by Verde Santa Fe, and was not able to recalculate the lease payment identified by the Company of $31,055.

Q. So what is Staff's conclusion with regards to the Company's lease calculation?

A. Staff believes that the math suggests that the cost of the underlying investment would need to be closer to $220,000 than $250,000 in order to calculate the $31,055 annual lease amount proposed by the Company. Based upon the fact that the assets were provided through an affiliated company, it is possible that the $250,000 value of these assets could be overstated if the other lease terms are accurate. However, Staff believes that there are two critical rate making considerations.

First, the lease payments are based upon a ten year lease arrangement. The wastewater treatment assets are expected to have a useful life of 20 years, therefore, Staff believes that imputing an annual lease or financing cost based upon a 20 year loan would be more reasonable and fair to the ratepayers since there would be no disconnect between the financing terms associated with the acquisition of these assets and the useful life of the assets.

Second, the terms of the related party transaction would cause Verde Santa Fe to over-pay for the wastewater treatment assets. Pivotal would presumably be fully reimbursed for the $250,000 cost of the assets over the 10 year lease term. In addition to the $250,000 paid over the 10 years, the lease agreement requires Verde Santa Fe to pay the fair market value to Pivotal at the end of this ten year period in order for Verde Santa Fe to obtain ownership of the wasterwater treatment assets.

Q. Is rental of the $250,000 in equipment from Pivotal in the public interest?

A. No, it is not. The 10 year term of the related party lease agreement is not consistent with the 20 year useful life of the assets; the requirement that Verde Santa Fe pay the fair market value for the assets would cause overpayment of the assets; and the $250,000 in equipment is not protected from Pivotal's creditors should the owner file for bankruptcy or die. The resulting legal and financial problems could threaten or possibly cause disruption of wastewater service for Verde Santa Fe's customers.

Q. What is Staff recommending concerning the rental of the $250,000 in equipment plant?

A. Staff recommends that that the Company develop a plan that results in the transfer of the leased plant from the affiliate to Verde Santa Fe. The plan is to be subject to Staff approval and filed in Docket within 90 days of the Decision date resulting in this matter.

Q. What is Staff's recommendation concerning Rents Expense?

A. Staff recommends decreasing the Rents Expense by $11,256, as shown on Schedules CSB-6 and CSB-8. The resulting annual cost would be $19,799 which is consistent with an assumed 20-year loan.

Operating Income Adjustment No. 3 – Property Taxes

Q. Did Staff review the Company's property tax calculation?

A. Yes.

Q. What assessment ratio did the Company use in the calculation of property tax?

A. The Company used a 21percent assessment ratio.

Q. Does Staff agree with the Company?

A. No, the correct assessment ratio to be used in the calculation of property taxes is 19 percent.

Q. Why is 19 percent correct and 21 percent not correct?

A. According to the Arizona Revised Statute 42-15001, the assessment ratio is 19 percent from and after December 31, 2013 through December 31, 2014.

Q. What is Staff's recommendation?

A. Staff recommends decreasing property tax expense by $1,059 as shown on Schedules CSB-6 and CSB-9.

Operating Income Adjustment No. 4 – Income Taxes

Q. What is Verde Santa Fe proposing for test year income tax expense?

A. Verde Santa Fe is proposing a negative $1,045 for income tax expense.

Q. Did Staff make any adjustments to test year income tax expense?

A. Yes. Staff's adjustment reflects Staff's calculation of the income tax expense based upon Staff's adjusted test year taxable income.

Q. What is Staff's recommendation?

A. Staff recommends increasing income tax expense by $6,351 as shown on Schedules CSB-6 and CSB-10.

RATE DESIGN

Q. Has Staff prepared a schedule summarizing the present, Company proposed, and Staff recommended rates and service charges?

A. Yes. Schedule CSB-11 provides a summary of the Company's present, Company's proposed, and Staff's recommended rates.

Q. Please summarize the present rate design for Verde Santa Fe.

A. For residential customers, the present monthly customer charge is $40.00.

For commercial customers, the present monthly charge is $40 x one Single Family Equivalent ("SFE"). If a commercial flat rate is necessary, it will be calculated for each commercial customer by dividing the expected design daily flow rate (as prescribed by the Ten State Standards) by one SFE. One SFE will equal 262 gallons per day (the approved design flow rate per single family unit by ADEQ). The resulting factor is multiplied by the approved residential flat rate to get the commercial monthly flat rate.

Effluent customers pay $2.00 per 1,000 gallons.

Q. Please summarize the Company's proposed rate design.

A. For residential customers, the proposed monthly customer charge is $45.68.

For commercial customers, the monthly charge is $45.68 x one SFE. One SFE is defined as 10 fixtures (sinks, toilets, showers, etc.). The SFE for a commercial customer will be equal to the number of fixtures divided by 10. If the computed SFE is less than 1.0, the factor will be 1.0, which provides that a commercial customer pays no less than a residential customer.

Effluent customers pay $0.23 per 1,000 gallons.

Q. Please summarize Staff's recommended rate design.

A. For residential customers, the recommended monthly customer charge is $42.12.

For commercial customers, the monthly charge is $42.12 x one SFE. One SFE is defined as 10 fixtures. The SFE for a commercial customer will be equal to the number of fixtures divided by 10. If the computed SFE is less than 1.0, the factor will be 1.0; which provides that a commercial customer pays no less than a residential customer.

Effluent customers pay $0.23 per 1,000 gallons.

Q. What is the background of the Company proposed effluent rate?

A. On October 14, 2009, Verde Santa Fe Wastewater Co., Inc. filed an application for approval of a revised tariff reducing the commodity rate for effluent sales (Docket No. SW-03437A-09-0493). In that docket, the Company proposed to reduce the rate for effluent sales from $2.00 per 1,000 gallons to $0.40 per 1,000 gallons. Staff did not have adequate time to review the application to determine whether or not the proposed tariff revision was revenue neutral. Consequently, Decision No. 71429 suspended the tariff for 120 days. Mr. Williamson stated in his direct testimony that Staff and the Commission urged the Company to file a rate application to address the issue. The Company has done so in the instant application.

Q. Why has Staff adopted the Company proposed effluent rate of $0.23 per 1,000 gallons?

A. As discussed in the direct testimony of Jason Williamson, the Company has requested to lower the effluent rate from $2.00 per 1,000 gallons to $0.23 per 1,000 as this is the

maximum that the golf course, which purchases all of the Company's effluent, is willing to pay. Mr. Williamson further stated that it would be more costly to dispose of the effluent in some other place. Staff is in agreement.

Q. Did the Company propose to add a charge for Service Lines?

A. Yes, Staff recommends approval. Both the Company proposed and the Staff recommended Service Line charges are shown on Schedule CSB-11 and are also discussed in the testimony of Staff witness, Katrin Stukov.

Service Charges

Q. Did the Company propose any changes to its service charges?

A. Yes. The Company proposes to add a deferred payment charge of 1.50 percent per month. The Company also proposes to add a $35 after hours charge.

Q. Does Staff agree with the Company-proposed deferred payment charge?

A. Yes. The proposed charge is reasonable and customary.

Q. Does Staff agree with the Company-proposed $35 after hours charge?

A. Yes.

Q. Does Staff have any recommendations concerning the Company's Reconnection (Delinquent) Charge?

A. Yes. Verde Santa Fe has proposed no increase to the Reconnection (Delinquent) Charge of $30. Staff recommends approval of a Reconnection (Delinquent) at Cost with a foot note that defines cost as follows: Actual cost of physical disconnection and reconnection (if same customer) and there shall be no charge if there is no physical work performed.

Q. Does Staff have any other recommendations concerning the Company's Service Charges?

A. Yes. Staff recommends the following:

Deposit and Deposit Interest – Staff recommends adding a reference to Rule Arizona Administrative Code ("AAC") R14-2-603.B. to the Deposit and Deposit Interest service charge.

Re-Establishment (within 12 months) – Staff recommends adding a reference to the Months off the system times the monthly minimum per AAC R14-2-603.D to the Re-Establishment (within 12 months) service charge.

Q. Does this conclude Staff's direct testimony?

A. Yes, it does.

Attachment A

DATA REQUEST RESPONSE CSB 2.9

ORGANIZATIONAL CHART

PIVOTAL/JW WATER HOLDINGS AFFILIATED ENTITIES CHART

JW WATER HOLDINGS (est. 2013)

- Managing Partner: Jason Williamson
- 7 other financial partners/ investors (none of whom have any other water/ wastewater ownership experience/ investments)
- Employees: 2 certified operators (based in Payson)/ 1 half-time office administrator
- Holding Company: Owns shares of 3 AZ water companies listed below:

Payson Water Company
(Regulated Water Company)

- 8 water systems centered around Payson, AZ
- 1113 Customers

Tonto Basin Water Co.
(Regulated Water Co.)

- 4 water systems around Lake Roosevelt, 1 system South of Florence, AZ
- 887 Customers

Navajo Water Company
(Regulated Water Company)

- 3 water systems around Show Low, AZ
- 304 Customers

SHARED FACILITIES

- JW Water Holdings and Pivotal Utility Management share a small (4 offices) executive/ administrative space at 7581 E Academy Blvd. Suite 229, Denver, CO 80230. JW Water pays Pivotal a monthly rental / use fee, and reimburses Pivotal for any direct expenses Pivotal incurs on behalf of JWW. The current monthly rental/ use fee is approximately $1000.
- There are no other shared facilities.

PIVOTAL UTILITY MGMT. (est. 1999)

- Managing Partner: Jason Williamson
- 2 Partners Dwight Zemp and John Clingman
- 3 employees: 2 full time and one half-time – all administrative/ bookkeeping
- Management Company only – does not have ownership in any other assets.
- Manages regulated and non-regulated utilities listed below:

Pivotal-Managed Utilities whose shares are also owned by JW, DZ, and JC:

- **Coronado Utilities**, San Manuel, AZ
  - AZ Regulated Sewer Utility
  - 1600 sewer services/ 1325 customers
- **Verde Santa Fe Wastewater Co.**, Cottonwood, AZ
  - AZ Regulated Sewer Utility
  - 990 services/ 950 customers
- **Pine Meadows Utilities**, Star Valley, AZ
  - AZ Regulated Sewer Utility
  - 125 sewer services/ customers
- **Bensch Ranch Utilities**, Cordes Jct., AZ
  - AZ Regulated Sewer Utility
  - 23 services/ customers

Pivotal-Managed Regulated Utilities who are owned by unaffiliated 3rd Parties:

- **Escapees North Ranch Utilities**, Congress, AZ
  - AZ Regulated Water & Sewer Utility
  - 410 water services/ customers
  - 409 sewer services/ customers
- **Links at Coyote Wash Utilities**, Wellton, AZ
  - AZ Regulated Sewer Utility
  - 410 services/ customers

Pivotal-Managed Unregulated Utilities who are owned by unaffiliated 3rd Parties:

- **Bison Ranch Wastewater System**, Overgaard, AZ
  - Contract operator/ manager for Sewer System owned by Bison Ranch HOA
  - Approx. 300 sewer services

SANTEC CORPORATION – Castle Rock, CO (owned by Dwight Zemp & John Clingman) Engineering and Mfg. Company who designs and builds wastewater treatment plants and supplies equipment (to all of the sewer systems above including Verde Santa Fe

Verde Santa Fe Wastewater Company, Inc. **Schedule CSB-1**
Docket No. SW-03437A-13-0292
Test Year Ended December 31, 2012

REVENUE REQUIREMENT

LINE NO.	DESCRIPTION	(A) COMPANY FAIR VALUE	(B) STAFF FAIR VALUE
1	Adjusted Rate Base	$ 421,336	$ 421,336
2	Adjusted Operating Income (Loss)	$ (3,950)	$ 20,544
3	Current Rate of Return (L2 / L1)	-0.94%	4.88%
4	Required Rate of Return	11.00%	9.60%
5	Required Operating Income (L4 * L1)	$ 46,347	$ 40,448
6	Operating Income Deficiency (L5 - L2)	$ 50,297	$ 19,905
7	Gross Revenue Conversion Factor	1.2966	1.2761
8	Required Revenue Increase (L7 * L6)	$ 65,213	**$ 25,400**
9	Adjusted Test Year Revenue	$ 479,551	$ 479,551
10	Proposed Annual Revenue (L8 + L9)	$ 544,764	$ 504,951
11	Required Increase in Revenue (%)	13.60%	5.30%

Verde Santa Fe Wastewater Company, Inc.
Docket No. SW-03437A-13-0292
Test Year Ended December 31, 2012

Schedule CSB-2

GROSS REVENUE CONVERSION FACTOR

LINE NO.	DESCRIPTION	(A)	(B)	(C)	(D)
	Calculation of Gross Revenue Conversion Factor:				
1	Revenue	100.0000%			
2	Uncollecible Factor (Line 11)	0.0000%			
3	Revenues (L1 - L2)	100.0000%			
4	Combined Federal and State Income Tax and Property Tax Rate (Line 23)	21.6362%			
5	Subtotal (L3 - L4)	78.3638%			
6	**Revenue Conversion Factor (L1 / L5)**	1.276099			
	Calculation of Uncollecttible Factor:				
7	Unity	100.0000%			
8	Combined Federal and State Tax Rate (Line 23)	20.5250%			
9	One Minus Combined Income Tax Rate (L7 - L8)	79.4750%			
10	Uncollectible Rate	0.0000%			
11	Uncollectible Factor (L9 * L10)	0.0000%			
	Calculation of Effective Tax Rate:				
12	Operating Income Before Taxes	100.0000%			
13	Arizona State Income Tax Rate	6.5000%			
14	Federal Taxable Income (L12 - L13)	93.5000%			
15	Applicable Federal Income Tax Rate (Line 55)	15.0000%			
16	Effective Federal Income Tax Rate (L14 x L15)	14.0250%			
17	Combined Federal and State Income Tax Rate (L13 +L16)		20.5250%		
	Calculation of Effective Property Tax Factor				
18	Unity	100.0000%			
19	Combined Federal and State Income Tax Rate (L17)	20.5250%			
20	One Minus Combined Income Tax Rate (L18-L19)	79.4750%			
21	Property Tax Factor	1.3981%			
22	Effective Property Tax Factor (L20*L21)		1.1112%		
23	Combined Federal and State Income Tax and Property Tax Rate (L17+L22)				21.6362%
24	Required Operating Income (Schedule CSB-1, Line 5)	$ 40,448			
25	AdjustedTest Year Operating Income (Loss)	20,544			
26	Required Increase in Operating Income (L24 - L25)		$ 19,905		
27	Income Taxes on Recommended Revenue (Col. [E], L52)	$ 10,446			
28	Income Taxes on Test Year Revenue (Col. [B], L52)	5,306			
29	Required Increase in Revenue to Provide for Income Taxes (L27 - L28)		5,141		
30	Recommended Revenue Requirement (Schedule CSB-1)	$ 504,951			
31	Uncollectible Rate (Line 10)	0.0000%			
32	Uncolllectible Expense on Recommended Revenue (L30*L31)	$ -			
33	Adjusted Test Year Uncollectible Expense	$ -			
34	Required Increase in Revenue to Provide for Uncollectible Exp. (L32-L33)		-		
35	Property Tax with Recommended Revenue	$ 20,469			
36	Property Tax on Test Year Revenue	20,114			
37	Increase in Property Tax Due to Increase in Revenue (L35-L36)		355		
38	Total Required Increase in Revenue (L26 + L29 + L34 + L37)		$ 25,400		

		Test Year		Staff Recommended
	Calculation of Income Tax:			
39	Revenue	$ 479,551	$ 25,400	$ 504,951
40	Operating Expenses Excluding Income Taxes	$ 453,702	$ 355	$ 454,057
41	Synchronized Interest (L56)	$ -		$ -
42	Arizona Taxable Income (L39 - L40 - L41)	$ 25,849		$ 50,894
43	Arizona State Income Tax Rate	6.5000%		6.5000%
44	Arizona Income Tax (L42 x L43)	$ 1,680		$ 3,308
45	Federal Taxable Income (L42 - L44)	$ 24,169		$ 47,586
46	Federal Tax on First Income Bracket ($1 - $50,000) @ 15%	$ 3,625		$ 7,138
47	Federal Tax on Second Income Bracket ($51,001 - $75,000) @ 25%	$ -		$ -
48	Federal Tax on Third Income Bracket ($75,001 - $100,000) @ 34%	$ -		$ -
49	Federal Tax on Fourth Income Bracket ($100,001 - $335,000) @ 39%	$ -		$ -
50	Federal Tax on Fifth Income Bracket ($335,001 -$10,000,000) @ 34%	$ -		$ -
51	Total Federal Income Tax	$ 3,625		$ 7,138
52	Combined Federal and State Income Tax (L44 + L51)	$ 5,306		$ 10,446
53	Applicable Federal Income Tax Rate [Col. [E], L51 - Col. [B], L51] / [Col. [E], L45 - Col. [B], L45]			15.0000%
	Calculation of Interest Synchronization:			
54	Rate Base	$ 421,336		
55	Weighted Average Cost of Debt			
56	Synchronized Interest (L45 X L46)	$ -		

Verde Santa Fe Wastewater Company, Inc. **Schedule CSB-3**
Docket No. SW-03437A-13-0292
Test Year Ended December 31, 2012

RATE BASE - ORIGINAL COST

LINE NO.		(A) COMPANY AS FILED	(B) STAFF ADJUSTMENTS	Adj. No.	(C) STAFF AS ADJUSTED
1	Plant in Service	$ 1,555,530	$ -		$ 1,555,530
2	Less: Accumulated Depreciation	658,177	-		658,177
3	Net Plant in Service	$ 897,353	$ -		$ 897,353
	LESS:				
4	Contributions in Aid of Construction (CIAC)	$ 978,305	$ -		$ 978,305
5	Less: Accumulated Amortization	502,287	-		$ 502,287
6	Net CIAC	476,018	-		$ 476,018
7	Advances in Aid of Construction (AIAC)	-	-		-
8	Customer Deposits	-	-		-
9	Deferred Income Tax Credits	-	-		-
	ADD:				
9	Deferred Regulatory Assets	-	-		-
10	Cash Working Capital	-	-		-
11	Prepayments	-	-		-
12	**Original Cost Rate Base**	$ 421,336	$ -		$ 421,336

References:
Column (A), Company Schedule B-1
Column (B): Schedule MEM-4
Column (C): Column (A) + Column (B)

Verde Santa Fe Wastewater Company, Inc. **Schedule CSB-4**
Docket No. SW-03437A-13-0292
Test Year Ended December 31, 2012

SUMMARY OF ORIGINAL COST RATE BASE ADJUSTMENTS

LINE NO.	ACCT. NO.		[A]	[B]	[C]
PLANT IN SERVICE:			COMPANY	Staff	STAFF
1		DESCRIPTION	AS FILED	Adjustments	ADJUSTED
2	351	Organization	$ 30,909	$ -	$ 30,909
3	352	Franchises	-	-	-
4	353	Land and Land Rights	45,400	-	45,400
5	354	Structures and Improvements	108,242	-	108,242
6	355	Power Generation Equipment	-	-	-
7	360	Collection Services - Force	328,735	-	328,735
8	361	Collection Services - Gravity	-	-	-
9	362	Special Collecting Structures	-	-	-
10	363	Services to Customers	73,179	-	73,179
11	364	Flow Measuring Devices	12,958	-	12,958
12	365	Flow Measuring Installations	-	-	-
13	370	Receiving Wells	-	-	-
14	371	Effluent Pumping Equipment	-	-	-
15	380	Treatment and Disposal Equipment	865,491	-	865,491
16	381	Plant Sewers	-	-	-
17	382	Outfall Sewer Lines	-	-	-
18	389	Other Plant & Misc. Equipment	-	-	-
19	390	Office Furniture & Equipment	5,803	-	5,803
20	391	Transportation Equipment	-	-	-
21	393	Tools, Shop & Garage Equipment	4,676	-	4,676
22	394	Labratory Equipment	630	-	630
23	395	Power Operated Equipment	-	-	-
24	396	Communication Equipment	-	-	-
25	398	Other Tangible Plant	79,507	-	79,507
26			-	-	-
27					
28		Total Plant in Service	$ 1,555,530	$ -	$ 1,555,530
29		Less: Accumulated Depreciation	658,177	-	658,177
30			-	-	-
31		Net Plant in Service (L59 - L 60)	$ 897,353	$ -	$ 897,353
32					
33		*LESS:*			
34		Contributions in Aid of Construction (CIAC)	$ 978,305	$ -	$ 978,305
35		Less: Accumulated Amortization	502,287	-	502,287
36		Net CIAC (L25 - L26)	476,018	-	476,018
37		Advances in Aid of Construction (AIAC)	-	-	-
38		Customer Deposits	-	-	-
39		Deferred Income Taxes	-	-	-
40			-	-	-
41					
42		*ADD:*			
43		Deferred Reg Asset	-	-	-
44		Cash Working Capital	-	-	-
45		Prepayments	-	-	-
46		**Original Cost Rate Base**	$ 421,336	$ -	$ 421,336

Verde Santa Fe Wastewater Company, Inc. **Schedule CSB-5**
Docket No. SW-03437A-13-0292
Test Year Ended December 31, 2012

OPERATING INCOME STATEMENT - ADJUSTED TEST YEAR AND STAFF RECOMMENDED

LINE NO.	DESCRIPTION	[A] COMPANY ADJUSTED TEST YEAR AS FILED	[B] STAFF TEST YEAR ADJUSTMENTS	Adj. No.	[C] STAFF TEST YEAR AS ADJUSTED	[D] STAFF PROPOSED CHANGES	[E] STAFF RECOMMENDED
1	*REVENUES:*						
2	Flat Rate Revenues	$ 462,400	$ -		$ 462,400	$ 25,400	$ 487,800
3	Unmetered Revenues	7,527	-		7,527	-	7,527
4	Other Wastewater Revenues	9,624	-		9,624	-	9,624
6	**Total Operating Revenues**	$ 479,551	$ -		$ 479,551	$ 25,400	$ 504,951
7							
8	*OPERATING EXPENSES:*						
9	Salaries and Wages	$ 31,683	$ (18,529)		$ 13,154	$ -	$ 13,154
10	Purchased Wastewater Trmnt	-	-		-	-	-
11	Sludge Removal Expense	21,328	-		21,328	-	21,328
12	Purchased Power	36,970	-		36,970	-	36,970
13	Fuel for Power Production	-	-		-	-	-
14	Chemicals	13,584	-		13,584	-	13,584
15	Materials & Supplies	5,772	-		5,772	-	5,772
16	Contractural Services, Accounting	-	-		-	-	-
17	Contractural Services, Professional	5,130	-		5,130	-	5,130
18	Contractural Services, Maintenance	-	-		-	-	-
19	Contractural Services - Other	227,098	-		227,098	-	227,098
20	Water Testing	9,784	-		9,784	-	9,784
21	Rents	31,055	(11,256)		19,799	-	19,799
22	Transportation Expenses	4,103	-		4,103	-	4,103
23	Insurance - General Liability	5,108	-		5,108	-	5,108
24	Insurance - Health and Life	-	-		-	-	-
25	Reg Comm Expense - Other	2,355	-		2,355	-	2,355
26	Reg Comm Expense - Rate Case	25,000	-		25,000	-	25,000
27	Miscellaneous Expense	22,364	-		22,364	-	22,364
28	Bad Debt Expense	-	-		-	-	-
29	Depreciation and Amortization Expense	22,039	-		22,039	-	22,039
30	Taxes other than Income	-	-		-	-	-
31	Property Taxes	21,173	(1,059)		20,114	355	20,469
32	Income Taxes	(1,045)	6,351		5,306	5,141	10,446
33		-	-		-	-	-
34	**Total Operating Expenses**	$ 483,501	$ (24,494)		$ 459,007	$ 5,496	$ 464,503
35	**Operating Income (Loss)**	$ (3,950)	$ 24,494		$ 20,544	$ 19,905	$ 40,448

References:
Column (A): Company Schedule C-1
Column (B): Schedule MEM-13
Column (C): Column (A) + Column (B)
Column (D): Schedules MEM-1 and MEM-2
Column (E): Column (C) + Column (D)

Verde Santa Fe Wastewater Company, Inc.
Docket No. SW-03437A-13-0292
Test Year Ended December 31, 2012

Schedule CSB-6

SUMMARY OF OPERATING INCOME STATEMENT ADJUSTMENTS - TEST YEAR

LINE NO.	DESCRIPTION	[A] COMPANY AS FILED	[B] Salaries and Wages, Directors ADJ #1	[C] Rents Expense Verde Santa Fe Expansion ADJ #2	[D] Property Tax Expense ADJ #4	[E] Income Tax Expense ADJ #5	[F] STAFF ADJUSTED
			Ref: Sch CSB-7	Ref: Sch CSB-8	Ref: Sch CSB-9	Ref: Sch CSB-10	
1	*REVENUES:*						
2	Flat Rate Revenues	$ 462,400	$ -	$ -	$ -	$ -	$ 462,400
3	Unmetered Revenues	7,527	-	-	-	-	7,527
4	Other Wastewater Revenues	9,624	-	-	-	-	9,624
5	**Total Operating Revenues**	$ 479,551	$ -	$ -	$ -	$ -	$ 479,551
6							
7	*OPERATING EXPENSES:*						
8	Salaries and Wages	$ 31,683	$ (18,529)	$ -	$ -	$ -	$ 13,154
9	Purchased Wastewater Trmnt	-	-	-	-	-	-
10	Sludge Removal Expense	21,328	-	-	-	-	21,328
11	Purchased Power	36,970	-	-	-	-	36,970
12	Fuel for Power Production	-	-	-	-	-	-
13	Chemicals	13,584	-	-	-	-	13,584
14	Materials & Supplies	5,772	-	-	-	-	5,772
15	Contractural Services, Accounting	-	-	-	-	-	-
16	Contractural Services, Professional	5,130	-	-	-	-	5,130
17	Contractural Services, Maintenance	-	-	-	-	-	-
18	Contractural Services - Other	227,098	-	-	-	-	227,098
19	Water Testing	9,784	-	-	-	-	9,784
20	Rents	31,055	-	(11,256)	-	-	19,799
21	Transportation Expenses	4,103	-	-	-	-	4,103
22	Insurance - General Liability	5,108	-	-	-	-	5,108
23	Insurance - Health and Life	-	-	-	-	-	-
24	Reg Comm Expense - Other	2,355	-	-	-	-	2,355
25	Reg Comm Expense - Rate Case	25,000	-	-	-	-	25,000
26	Miscellaneous Expense	22,364	-	-	-	-	22,364
27	Bad Debt Expense	-	-	-	-	-	-
28	Depreciation and Amortization Expense	22,039	-	-	-	-	22,039
29	Taxes other than Income	-	-	-	-	-	-
30	Property Taxes	21,173	-	-	(1,059)	-	20,114
31	Income Taxes	(1,045)	-	-	-	6,351	5,306
32		-	-	-	-	-	-
33	**Total Operating Expenses**	$ 483,501	$ (18,529)	$ (11,256)	$ (1,059)	$ 6,351	$ 459,007
34	**Operating Income (Loss)**	$ (3,950)	$ 18,529	$ 11,256	$ 1,059	$ (6,351)	$ 20,544

Verde Santa Fe Wastewater Company, Inc.
Docket No. SW-03437A-13-0292
Test Year Ended December 31, 201

Schedule CSB-7

OPERATING INCOME ADJUSTMENT NO. 1 - SALARIES & WAGES, DIRECTORS

LINE NO.	DESCRIPTION	[A] COMPANY AS FILED	[B] STAFF ADJUSTMENTS	[C] STAFF AS ADJUSTED
1	Salaries & Wages, Directors	$ 31,683	$ (18,529)	$ 13,154

	[D]	[E]		[F]		[G]	
	Employee	Total Hours Worked per Month for All Directors		Number of Months Each Director Works		Total Annual Hours Worked for Each Director	
11	Director 1	8	x	12	=	96	
12	Director 2	8	x	12	=	96	
13	Director 3	8	x	12	=	96	
14		24		36		$ 288	
15				Multiplied by		$ 46	From Line 20
16		**Salaries & Wages, Directors - Per Staff**				**$ 13,154**	
17							
18				Director Salary		$ 95,000	
19				Divided by Annual Work Hours		2,080	
20				Hourly Rate		$ 45.67	

References:

Column A: Company Schedule C-1
Column B: Testimony, CSB,
Column C: Column [A] + Column [B]

OPERATING INCOME ADJUSTMENT NO. 2 - RENTS EXPENSE, VERDE SANTA FE EXPANSION

LINE NO.		[A] COMPANY AS FILED	[B] STAFF ADJUSTMENTS	[C] STAFF AS ADJUSTED	
1	Rents Expense, Verde Santa Fe Expansion	$ 31,055	$ (11,256)	$ 19,799	From Sch CSB-8, P.2

References:

Column A: Company Schedule C-1
Column B: Testimony, CSB,
Column C: Column [A] + Column [B]

OPERATING INCOME ADJUSTMENT NO. 2 - RENTS EXPENSE, VERDE SANTA FE EXPANSION CONTINUED

Loan Amount Requested	$250,000		
Down Payment:	$0		
Amount Financed:	$250,000		
Number of years:	20	Compounding Periods:	12
Interest rate (r):	5.00%	APR:	5.12%

LOAN AMORTIZATION SCHEDULE

Period	Loan payment (1)	Beginning-of-month principal (2)	Payments: Interest [r * (2)] (3)	Payments: Principal [(1) - (3)] (4)	End-of-month principal [(2) - (4)] (5)	Annual Interest (6)	Annual Principal (7)	Annual Debt Payment (8)
1	$1,649.89	$250,000.00	$1,041.67	$608.22	$249,391.78			
2	1,649.89	249,391.78	1,039.13	610.76	248,781.02			
3	1,649.89	248,781.02	1,036.59	613.30	248,167.72			
4	1,649.89	248,167.72	1,034.03	615.86	247,551.86			
5	1,649.89	247,551.86	1,031.47	618.42	246,933.44			
6	1,649.89	246,933.44	1,028.89	621.00	246,312.44			
7	1,649.89	246,312.44	1,026.30	623.59	245,688.85			
8	1,649.89	245,688.85	1,023.70	626.19	245,062.66			
9	1,649.89	245,062.66	1,021.09	628.79	244,433.87			
10	1,649.89	244,433.87	1,018.47	631.41	243,802.45			
11	1,649.89	243,802.45	1,015.84	634.05	243,168.41			
12	1,649.89	243,168.41	1,013.20	636.69	242,531.72	12,330.39	7,468.28	19,798.67

Verde Santa Fe Wastewater Company, Inc.
Docket No. SW-03437A-13-0292
Test Year Ended December 31, 2012

Schedule CSB-9

OPERATING INCOME ADJUSTMENT No. 3 - Property Tax Expense

LINE NO.	Property Tax Calculation	STAFF AS ADJUSTED	STAFF RECOMMENDED
1	Staff Adjusted Test Year Revenues	$ 479,551	$ 479,551
2	Weight Factor	2	2
3	Subtotal (Line 1 * Line 2)	959,102	$ 959,102
4	Staff Recommended Revenue, Per Schedule CSB-1	479,551	$ 504,951
5	Subtotal (Line 4 + Line 5)	1,438,653	1,464,053
6	Number of Years	3	3
7	Three Year Average (Line 5 / Line 6)	479,551	$ 488,018
8	Department of Revenue Mutilplier	2	2
9	Revenue Base Value (Line 7 * Line 8)	959,102	$ 976,035
10	Plus: 10% of CWIP -	-	-
11	Less: Net Book Value of Licensed Vehicles	-	$ -
12	Full Cash Value (Line 9 + Line 10 - Line 11)	959,102	$ 976,035
13	Assessment Ratio	19.0%	19.0%
14	Assessment Value (Line 12 * Line 13)	182,229	$ 185,447
15	Composite Property Tax Rate (Per Company Schedule C-2)	11.0379%	11.0379%
			$ -
16	Staff Test Year Adjusted Property Tax (Line 14 * Line 15)	$ 20,114	
17	Company Proposed Property Tax	21,173	
18	Staff Test Year Adjustment (Line 16-Line 17)	$ (1,059)	
19	Property Tax - Staff Recommended Revenue (Line 14 * Line 15)		$ 20,469
20	Staff Test Year Adjusted Property Tax Expense (Line 16)		$ 20,114
21	Increase in Property Tax Expense Due to Increase in Revenue Requirement		$ 355
22	Increase to Property Tax Expense		$ 355
23	Increase in Revenue Requirement		25,400
24	Increase to Property Tax per Dollar Increase in Revenue (Line19/Line 20)		1.398134%

Verde Santa Fe Wastewater Company, Inc.
Docket No. SW-02519A-06-0015
Test Year Ended October 31, 2005

Schedule CSB-10

OPERATING INCOME ADJUSTMENT NO. 4 - TEST YEAR INCOME TAXES

LINE NO.	DESCRIPTION	Test Year
	Calculation of Income Tax:	
1	Revenue (Schedule CSB-11)	$ 479,551
2	Operating Expenses Excluding Income Taxes	$ 453,702
3	Synchronized Interest (L17)	$ -
4	Arizona Taxable Income (L1 - L2 - L3)	$ 25,849
5	Arizona State Income Tax Rate	6.5000%
6	Arizona Income Tax (L4 x L5)	$ 1,680
7	Federal Taxable Income (L4 - L6)	$ 24,169
8	Federal Tax on First Income Bracket ($1 - $50,000) @ 15%	$ 3,625
9	Federal Tax on Second Income Bracket ($51,001 - $75,000) @ 25%	$ -
10	Federal Tax on Third Income Bracket ($75,001 - $100,000) @ 34%	$ -
11	Federal Tax on Fourth Income Bracket ($100,001 - $335,000) @ 39%	$ -
12	Federal Tax on Fifth Income Bracket ($335,001 -$10,000,000) @ 34%	$ -
13	Total Federal Income Tax	$ 3,625
14	Combined Federal and State Income Tax (L44 + L51)	$ 5,306
	Calculation of Interest Synchronization:	
15	Rate Base (Schedule CSB-13, Col. (C), Line 16)	$ 421,336
16	Weighted Average Cost of Debt	0.00%
17	Synchronized Interest (L16 x L17)	$ -
18	Income Tax - Per Staff	$ 5,306
19	Income Tax - Per Company	$ (1,045)
20	**Staff Adjustment**	**$ 6,351**

Verde Santa Fe Wastewater Company, Inc.
Docket No. SW-03437A-13-0292
Test Year Ended December 31, 2012

Schedule CSB-11

RATE DESIGN

	Present	Company Proposed	Staff Recommended
Residential	$ 40.00	$ 45.68	$ 42.12
Commercial	$ 40.00 xSFE (See Note 1)	$ 45.68 xSFE (See Note 2)	$ 42.12 xSFE (See Note 2)
Effluent Sales (All Meter Sizes)			
Charge per 1,000 gallons	$ 2.00	$ 0.23	$ 0.23

Note 1: If a commercial flat rate is necessary, it will be calculated for each commercial customer by dividing the expected design daily flow rate (as prescribed by the Ten State Standards) by one SFE (single family equivalent). One SFE will equal 262 gallons per day (the approved design flow rate per single family unit by ADEQ. The resulting factor will be multiplied by the approved residential flat rate to get the commercial monthly flat rate.

Note 2: One SFE is defined as 10 fixtures (sinks and/or toilets and/or showers, etc). The SFE for a commercial customer will be equal to the number of fixtures divided by 10. If the computed SFE is less than 1.0, the factor will be 1.0; which provides that a commercial customer pays no less than a residential customer.

Service Line Charge	NT	Cost	Cost
Service Charges			
Establishment	$ 25.00	$ 25.00	$ 25.00
Reconnection (Delinquent)	$ 30.00	$ 30.00	Cost (a)
Deposit	Per Rule	Per Rule	Per Rule**
Deposit Interest (Annual Effective Rate)	3.50%	3.50%	3.50%
Reestablishment (within 12 months)	Per Rule	Per Rule	Per Rule*
Deferred payment (per month)	NT	1.50%	1.50%
Late payment Penalty (per month)***	1.50%	1.50%	1.50%
NSF check	$ 25.00	$ 25.00	$ 25.00
After Hours Service Charge (At the Customer's Request)	NT	$ 35.00	$ 35.00

* Number of months off the system times the applicable sewer charge.
** Per Commission Rule R14-2-603.B.7 and 603.B.3
*** Late payment charge based upon balance owing at the end of the billing cycle which is added to next bill.
NT = No Tariff
(a) Actual cost of physical disconnection and reconnection (if same customer) and there shall be no charge if there is no physical work performed.

Verde Santa Fe Wastewater Company, Inc.
Docket No. SW-03437A-13-0292
Test Year Ended December 31, 2012

Schedule CSB-12

TYPICAL BILL ANALYSIS

Residential Service

	Present Rates	Proposed Rates	Dollar Increase	Percent Increase
Company	$ 40.00	$ 45.68	$5.68	14.2%
Staff	$ 40.00	$ 42.12	$2.12	5.3%

BEFORE THE ARIZONA CORPORATION COMMISSION

BOB STUMP
Chairman
GARY PIERCE
Commissioner
BRENDA BURNS
Commissioner
BOB BURNS
Commissioner
SUSAN BITTER SMITH
Commissioner

IN THE MATTER OF THE APPLICATION OF VERDE SANTA FE WASTEWATER CO., INC. AN ARIZONA CORPORATION, FOR A DETERMINATION OF THE FAIR VALUE OF ITS UTILITY PLANTS AND PROPERTY AND FOR INCREASES IN ITS WASTEWATER RATES AND CHARGES FOR UTILITY SERVICE BASED THEREON	)	DOCKET NO. SW-03437A-13-0292

DIRECT

TESTIMONY

OF

KATRIN STUKOV

UTILITIES ENGINEER

ARIZONA CORPORATION COMMISSION

UTILITIES DIVISION

FEBRUARY 24, 2014

TABLE OF CONTENTS

EXHIBITS

INTRODUCTION

Q. Please state your name, place of employment and job title.

A. My name is Katrin Stukov. My place of employment is the Arizona Corporation Commission ("Commission"), Utilities Division ("Staff"), 1200 West Washington Street, Phoenix, Arizona 85007. My job title is Utilities Engineer.

Q. How long have you been employed by the Commission?

A. I have been employed by the Commission since June 2006.

Q. Please list your duties and responsibilities.

A. As a Utilities Engineer, specializing in water and wastewater engineering, I inspect and evaluate water and wastewater systems, obtain data, prepare reports, suggest corrective action, provide technical recommendations on water and wastewater system deficiencies, and provide written and oral testimony on rate and other cases before the Commission.

Q. How many cases have you analyzed for the Utilities Division?

A. I have analyzed over 80 cases covering various responsibilities for the Utilities Division.

Q. What is your educational background?

A. I graduated from the Moscow University of Civil Engineering with a Bachelor of Science degree in Civil Engineering with a concentration in water and wastewater systems.

Q. Briefly describe your pertinent work experience.

A. Prior to my employment with the Commission, I was a design review environmental engineer with the Arizona Department of Environmental Quality ("ADEQ") for twenty years. My responsibilities with ADEQ included review of projects for the construction of

water and wastewater facilities. Prior to that, I worked as a civil engineer in several engineering and consulting firms, including Bechtel, Inc. and Brown & Root, Inc., in Houston, Texas.

PURPOSE OF TESTIMONY

Q. Were you assigned to provide the Staff's engineering analysis and recommendations for this Verde Santa Fe Wastewater Company ("VSF" or "Company") rate case proceeding?

A. Yes. I reviewed the Company's application and responses to data requests, and I visited the wastewater system. This testimony and its attachment present Staff's engineering evaluation.

ENGINEERING REPORT

Q. Please describe the attached Engineering Report, Exhibit KS.

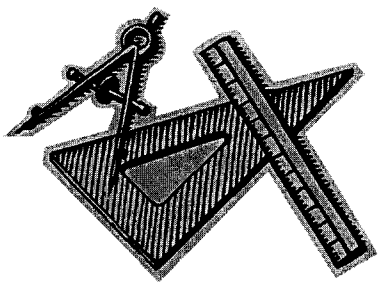
A. Exhibit KS presents VSF's wastewater system details and Staff's analysis and findings, and is attached to this Direct Testimony. Exhibit KS contains the following major topics: (1) a description of the wastewater system, (2) analysis of the wastewater system, (3) growth, (4) compliance with the rules of ADEQ, (5) depreciation rates and (6) Staff's conclusions and recommendations.

Q. Please summarize Staff's engineering conclusions and recommendations.

A. Such a summary is provided at the front of Exhibit KS.

Q. Does this conclude your Direct Testimony?

A. Yes, it does.



ENGINEERING REPORT FOR
VERDE SANTA FE WASTEWATER CO., INC.
RATE APPLICATION
DOCKET NO. SW-03437A-13-0292

December 18, 2013

SUMMARY

CONCLUSIONS

1. The Arizona Department of Environmental Quality ("ADEQ") reported that based on the latest self-reported data, ADEQ finds that the Verde Santa Fe Wastewater Co., Inc.'s ("VSF" or "Company") Wastewater Treatment Plant is not currently in violation at a level at which ADEQ will take an action or issue a Notice of Opportunity to Correct or Notice of Violation.

2. Based on the wastewater flow data for the test year, Arizona Corporation Commission ("ACC") Utilities Division Staff ("Staff") concludes that the VSF wastewater system is adequate to serve the present customer base and reasonable growth.

3. The Company has no outstanding ACC compliance issues.

RECOMMENDATIONS

1. Staff recommends the depreciation rates delineated in Table A.

2. Staff recommends the acceptance of the Company's requested Service Lateral Installation Charges at cost.

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A. INTRODUCTION AND LOCATION OF COMPANY

On August 30, 2013, Verde Santa Fe Wastewater Co., Inc. ("VSF" or "Company") filed a wastewater rate application with the Arizona Corporation Commission ("ACC" or "Commission"). The Company provides wastewater service to customers in a master-planned development ("Development") near the City of Cottonwood in Yavapai County.

The plant facilities were visited on November 20, 2013, by Katrin Stukov, Commission Utilities Division Staff ("Staff") Engineer, accompanied by Pat Carpenter, the Company's system operator.

Figure 1 shows the location of the Company within Yavapai County and Figure 2 delineates the approximate 0.7 square miles or 450 acres of certificated area.

Figure1

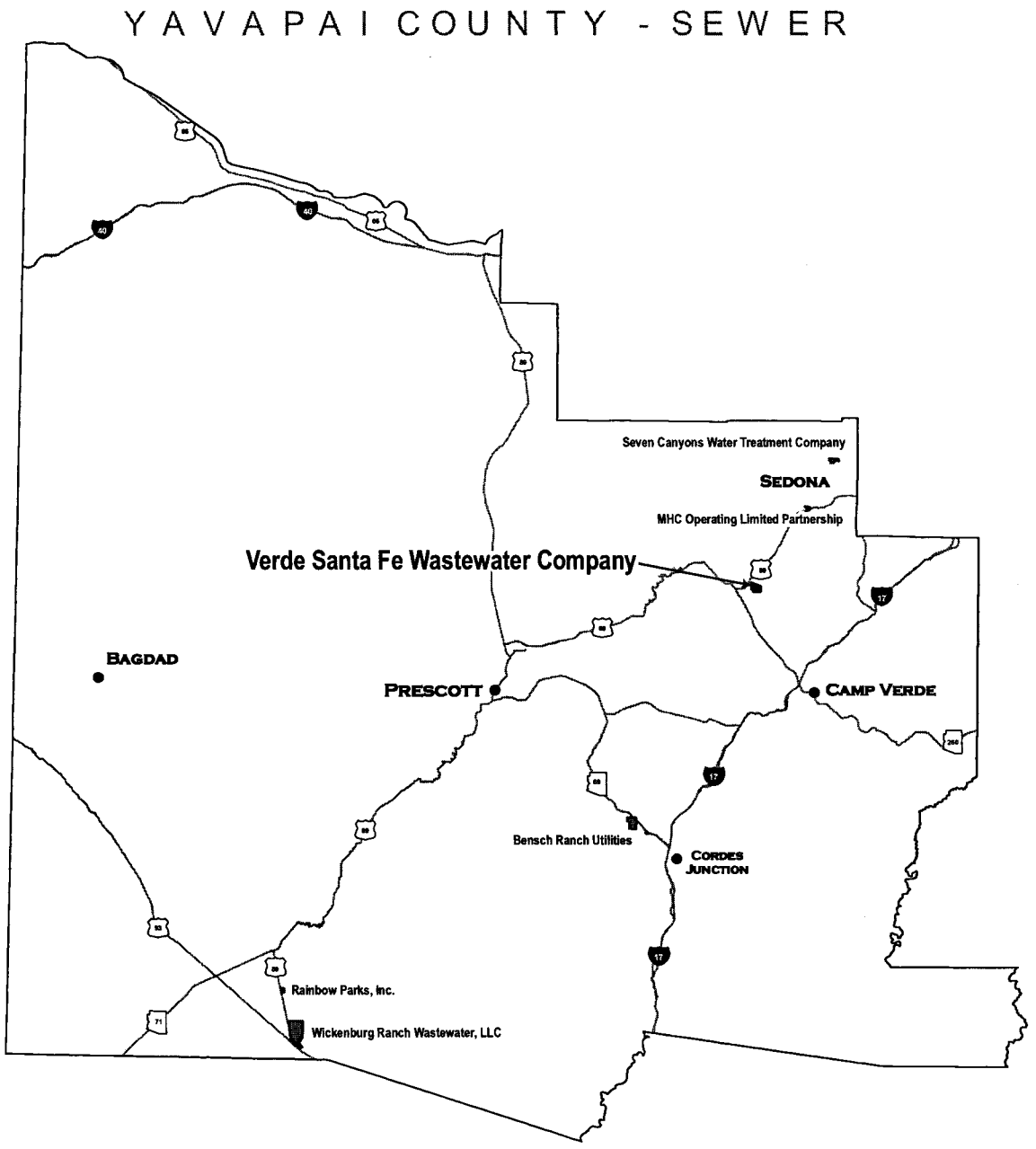
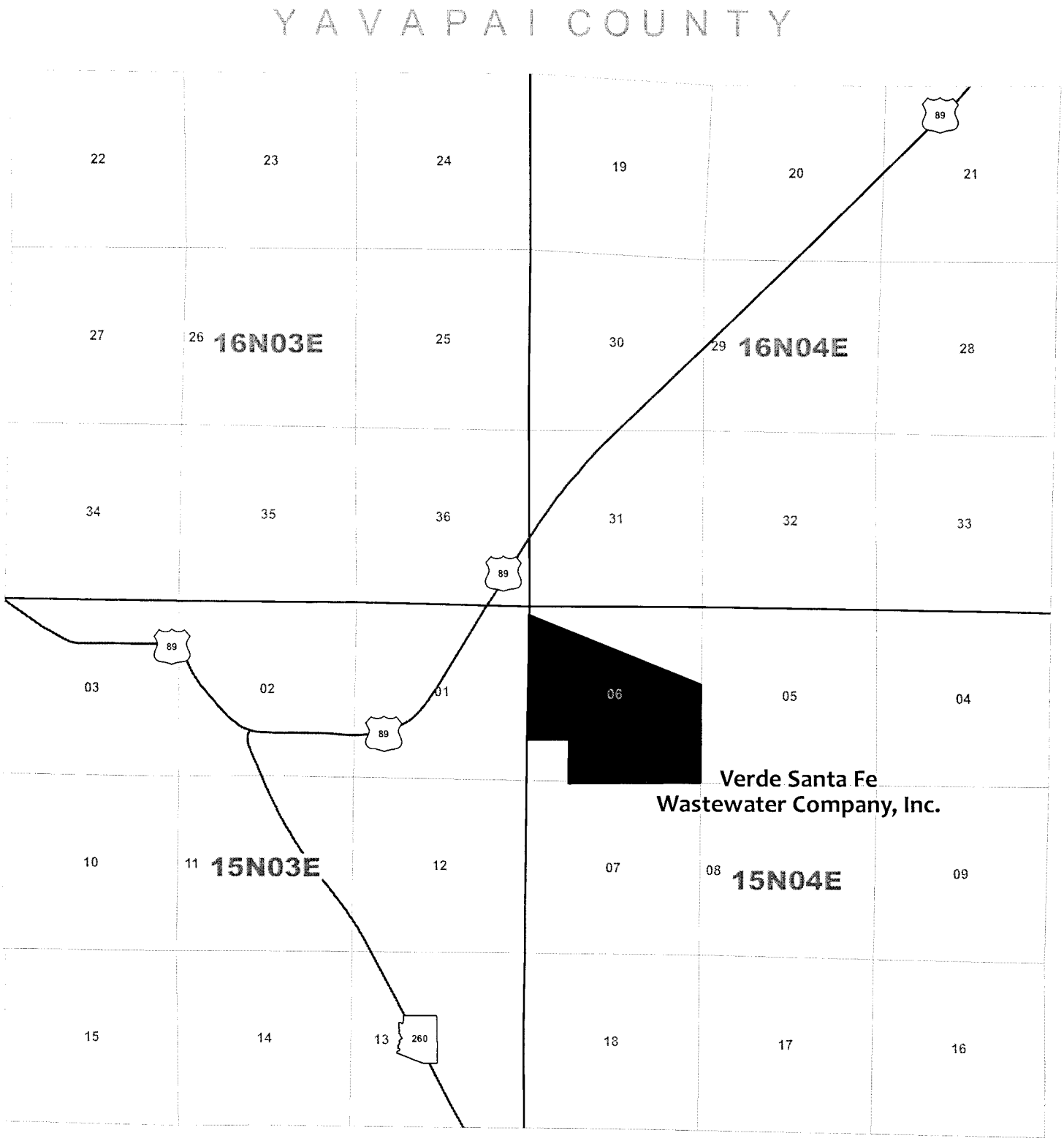

YAVAPAI COUNTY - SEWER
Seven Canyons Water Treatment Company
SEDONA
MHC Operating Limited Partnership
Verde Santa Fe Wastewater Company
BAGDAD
PRESCOTT
CAMP VERDE
Bensch Ranch Utilities
CORDES JUNCTION
Rainbow Parks, Inc.
Wickenburg Ranch Wastewater, LLC

Figure 2


YAVAPAI COUNTY
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Verde Santa Fe
Wastewater Company, Inc.
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15N04E
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B. DESCRIPTION OF THE WASTEWATER SYSTEM

During the test-year, ending December 31, 2012, VSF served over 950 customers, including several commercial customers and one effluent (reclaimed water) customer, the Verde Santa Fe Golf Course ("Golf Course").

The Company's sewer collection system consists of a combination of gravity and force mains and two lift stations. The current operation of the wastewater treatment facilities includes a Santec 100,000 gallon per day ("GPD") wastewater treatment plant ("WWTP"), a 40,000 gallon flow equalization basin, grit and solid removal, sludge treatment and handling, disinfection, influent lift stations and effluent lift stations.

The effluent from the WWTP is pumped into the Golf Course's effluent holding ponds for reuse on the Golf Course. The Company has not developed a contingency plan for effluent disposal in the event the Golf Course refuses to accept VSF's effluent.

Figure 3 provides a process schematic for the wastewater system and the plant facilities summary is tabulated below:

Wastewater Treatment Facility[1]

Type of Treatment	Modified extended aeration with nutrient removal process, treating to Class B+ effluent. Includes 2 anoxic tanks* and 2 aeration tanks*.
Capacity	100,000 GPD
Solid Processing and Handling Facilities	Inlet comminutor*, grit chamber, bar screen. Sludge digester/ settling tank* and Driamad 6-bag sludge bagging unit
Disinfection Equipment	Liquid Chlorine feed system Chlorine contact tank*
Air Filtration and Odor Control Equipment	Forced air carbon filtration system in sludge bagging room
Structures	Block fence around site and landscape berm. Operations and equipment buildings
Others	Standby diesel power generator*, 4 back-up pumps, confined space safety equipment, laboratory and process control equipment

[1] * Indicates leased equipment per the Company Response CSB 3.5 a.

Lift Stations

Location	Pumps			Wet Well Capacity (gallons)	Meters
	Quantity	Horsepower per pump (HP)	Capacity per pump (GPM)		
Sewer lift station No.1 (at 4400 W. Hogan Road)	2	2	60	1,000	
Sewer lift station No.2 (Amante- near water plant site)	2	17	150	2,500	
Influent lift station at WWTP site	2	15	620	1,814	2" Flow Meter
Effluent lift station at WWTP site	2	26	356	4,681	6" Flow Meter

Force Mains

Size	Location	Material	Length (in feet)
2-inch	Force main from sewer lift station No. 1 to WWTP	PVC	6,690
4-inch	Force main from sewer lift station No.2 to WWTP	PVC	1,722
6-inch	Effluent (Reuse) force main to holding ponds	PVC	5,447

Collection Mains

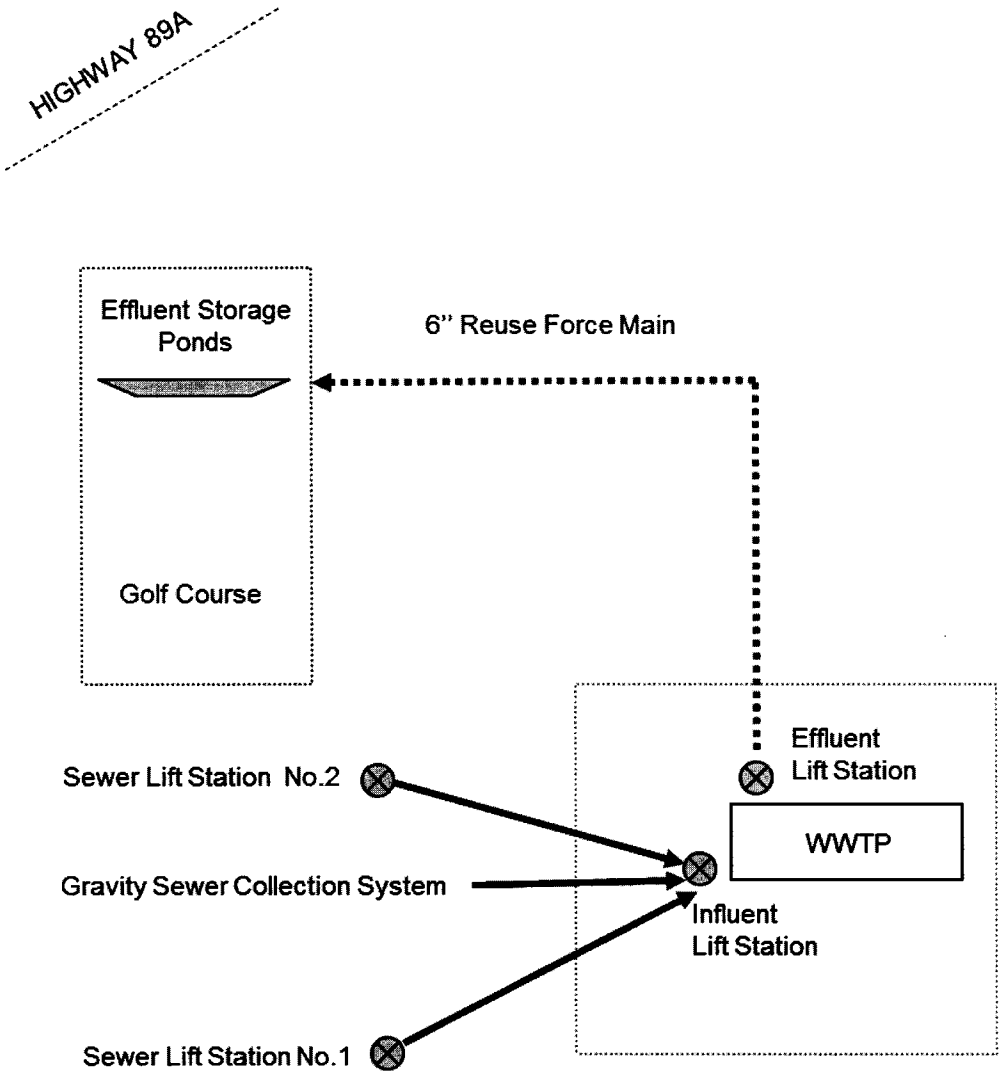
Size (in inches)	Material	Length (in feet)
3	PVC	2,265
4	PVC	3,651
6	PVC	22,954

Services

Size (in inches)	Material	Quantity
2	PVC	353
4	PVC	607
6	PVC	4
	Total	964

Manholes		Cleanouts
Type	Quantity	Quantity
Standard	154	31

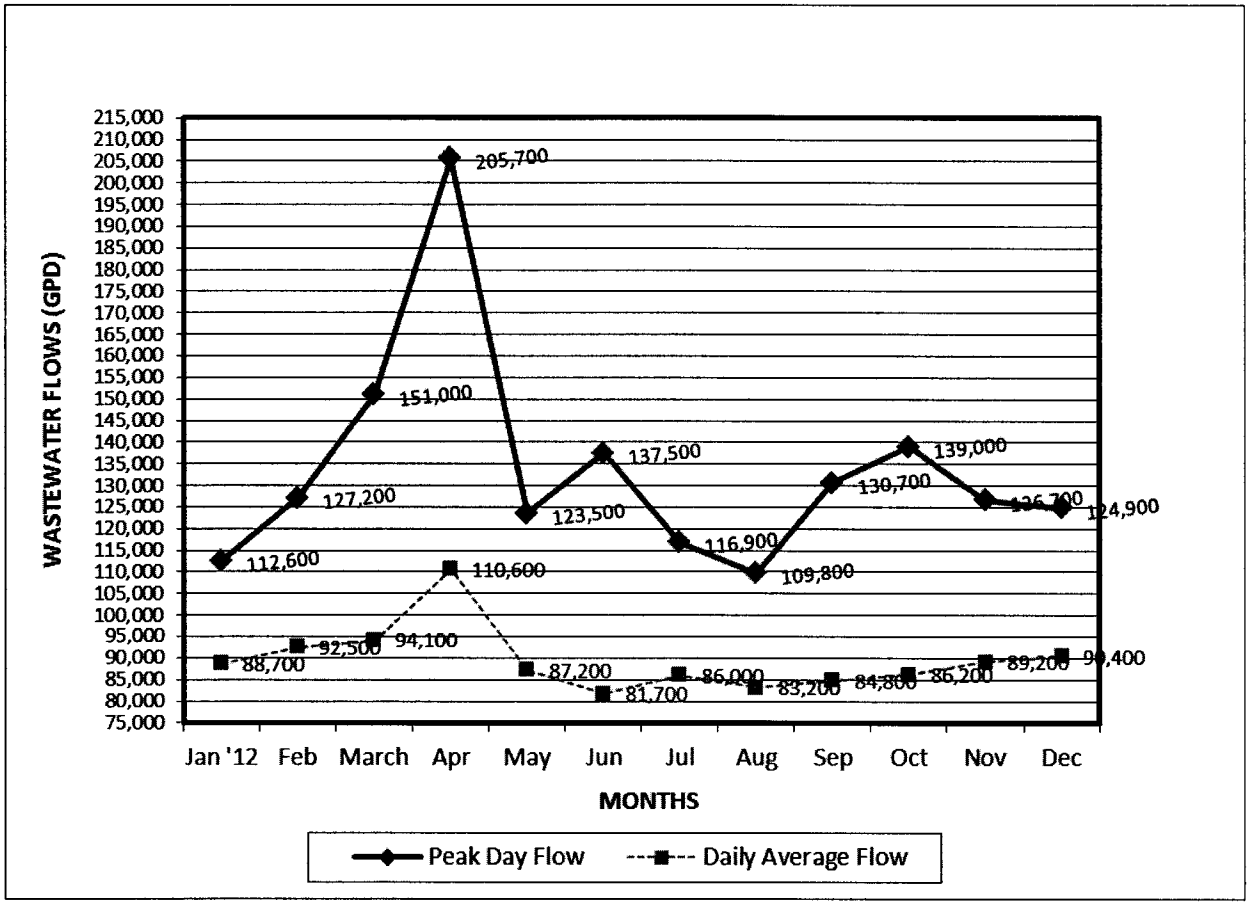
Figure 3
System Schematic



C. WASTEWATER SYSTEM ANALYSIS

Figure 4 represents the monthly wastewater flows based on the wastewater flow data provided by the Company for the test year ending December 31, 2012. Based on the current Arizona Department of Environmental Quality ("ADEQ") Aquifer Protection Permit ("APP") number 103173 issued on April 22, 2008, the Company is authorized to operate a WWTP with a maximum average monthly flow of 264,000 gallon per day ("GPD"). For the average daily flows, April 2012 experienced the highest flow of 110,600 GPD. For the peak day flows, April 2012 had the highest flow when 205,700 gallons were recorded in one day. The Company attributed this high flow to the fact that a resort emptied their pool on that day.[2] The Company asserts that because the WWTP is equipped with a flow equalization basin and a series of pumps that regulate the influent flow rate, the wastewater system is capable of absorbing this peak day flow. Based on the average day-peak month flow of 110,600 gallons, or 116 GPD per sewer lateral, Staff concludes that the WWTP's current capacity is adequate to serve the present customer base and reasonable growth.

Figure 4 Wastewater Flows



[2] According to the VSF's e-mail, dated September 24, 2013

D. GROWTH

According to the Company, VSF's existing certificated area currently does not have much additional land or parcels to be developed. Consequently, the VSF wastewater system is expected to experience minimal growth. A listing of the number of services at the end of each year from 2008 to 2012 is tabulated below[3]:

2008	2009	2010	2011	2012
935	949	951	946	955

E. ADEQ COMPLIANCE

On November 8, 2013, ADEQ reported that based on the Company's latest self-reported data available through the second quarter of 2013 ending June 30, 2013, ADEQ finds that the VSF WWTP is not currently in violation at a level at which ADEQ will take an action or issue a Notice of Opportunity to Correct or Notice of Violation.

F. ACC COMPLIANCE

A check with Utilities Division Compliance Section showed that there are currently no delinquent compliance items for the Company[4].

G. DEPRECIATION RATES

Staff has developed typical and customary depreciation rates within a range of anticipated equipment life. These rates are presented in Table A. Staff recommends that the Company adopt Staff's typical and customary depreciation rates in the accounts listed in Table A.

[3] Based on customer data provided by the Company in its Annual Reports
[4] Per ACC Compliance status check dated September 10, 2012.

TABLE A

WASTEWATER DEPRECIATION RATES

NARUC Acct. No.	Depreciable Plant	Average Service Life (Years)	Annual Accrual Rate (%)
354	Structures & Improvements	30	3.33
355	Power Generation Equipment	20	5.00
360	Collection Sewers – Force	50	2.0
361	Collection Sewers- Gravity	50	2.0
362	Special Collecting Structures	50	2.0
363	Services to Customers	50	2.0
364	Flow Measuring Devices	10	10.0
365	Flow Measuring Installations	10	10.00
366	Reuse Services	50	2.00
367	Reuse Meters & Meter Installations	12	8.33
370	Receiving Wells	30	3.33
371	Pumping Equipment	8	12.50
374	Reuse Distribution Reservoirs	40	2.50
375	Reuse Transmission & Distribution System	40	2.50
380	Treatment & Disposal Equipment	20	5.0
381	Plant Sewers	20	5.0
382	Outfall Sewer Lines	30	3.33
389	Other Plant & Miscellaneous Equipment	15	6.67
390	Office Furniture & Equipment	15	6.67
390.1	Computers & Software	5	20.0
391	Transportation Equipment	5	20.0
392	Stores Equipment	25	4.0
393	Tools, Shop & Garage Equipment	20	5.0
394	Laboratory Equipment	10	10.0
395	Power Operated Equipment	20	5.0
396	Communication Equipment	10	10.0
397	Miscellaneous Equipment	10	10.0
398	Other Tangible Plant	----	----

NOTE: Acct. 398, Other Tangible Plant may vary from 5% to 50%. The depreciation rate would be set in accordance with the specific capital items in this account.

H. OTHER ISSUES

Service Lateral Installation Charges

The Company currently does not have a tariff for service lateral installation charges. The Company requested that service lateral installation be charged at cost. Staff recommends the acceptance of the Company's requested Service Lateral Installation Charges at cost.

BEFORE THE ARIZONA CORPORATION COMMISSION

BOB STUMP
Chairman
GARY PIERCE
Commissioner
BRENDA BURNS
Commissioner
SUSAN BITTER SMITH
Commissioner
BOB BURNS
Commissioner

IN THE MATTER OF THE APPLICATION OF VERDE SANTA FE WASTEWATER CO., INC., AN ARIZONA CORPORATION, FOR A DETERMINATION OF THE FAIR VALUE OF ITS UTILITY PLANTS AND PROPERTY AND FOR INCREASES IN ITS WASTEWATER RATES AND CHARGES FOR UTILITY SERVICE BASED THEREON.	)	DOCKET NO. SW-03437A-13-0292

DIRECT

TESTIMONY

OF

JOHN A. CASSIDY

PUBLIC UTILITIES ANALYST

UTILITIES DIVISION

ARIZONA CORPORATION COMMISSION

FEBRUARY 24, 2014

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SCHEDULES

EXECUTIVE SUMMARY
VERDE SANTA FE WASTEWATER COMPANY
DOCKET NO. SW-03437A-13-0292

The direct testimony of Staff witness John A. Cassidy addresses the following issues:

Capital Structure – Staff recommends that the Commission adopt a capital structure for Verde Santa Fe Wastewater Company ("Company") for this proceeding consisting of 0.0 percent debt and 100.0 percent equity.

Cost of Equity – Staff recommends that the Commission adopt a 9.6 percent return on equity ("ROE") for the Company. Staff's estimated ROE for the Company is based on the 9.0 percent average of its discounted cash flow method ("DCF") cost of equity methodology estimates for the sample companies of 8.6 percent for the constant-growth DCF model and 9.4 percent for the multi-stage DCF model. Staff's recommended ROE includes an upward economic assessment adjustment of 60 basis points (0.6 percent).

Cost of Debt – The Company has no debt in its capital structure.

Overall Rate of Return – Staff recommends that the Commission adopt a 9.0 percent overall rate of return.

Mr. Bourassa's Testimony – The Commission should reject the Company's proposed 11.0 percent ROE for the following reasons:

Mr. Bourassa's primary Future Growth DCF estimates rely exclusively on analysts' forecasts of earnings per share growth. Effectively, Mr. Bourassa's overall DCF estimate is weighted 75 percent by his Future Growth DCF estimates. The current market risk premium in Mr. Bourassa's current MRP CAPM model is not reflective of current market conditions and serves to overstate his CAPM cost of equity estimate. Mr. Bourassa's proposed ROE has been inflated by an implicit upward adjustment for financial risk and small company risk premium.

I. INTRODUCTION

Q. Please state your name, occupation, and business address.

A. My name is John A. Cassidy. I am a Public Utilities Analyst employed by the Arizona Corporation Commission ("Commission") in the Utilities Division ("Staff"). My business address is 1200 West Washington Street, Phoenix, Arizona 85007.

Q. Briefly describe your responsibilities as a Public Utilities Analyst.

A. I am responsible for the examination of financial and statistical information included in utility rate applications and other financial matters, including studies to estimate the cost of capital component in rate filings used to determine the overall revenue requirement, and for preparing written reports, testimonies and schedules to present Staff's recommendations to the Commission on these matters.

Q. Please describe your educational background and professional experience.

A. I hold a Bachelor of Arts degree in History from Arizona State University, a Master of Library Science degree from the University of Arizona, and a Master of Business Administration degree with an emphasis in Finance from Arizona State University. While pursuing my MBA degree, I was inducted into Beta Gamma Sigma, the National Business Honor Society. I have passed the CPA exam, but opted not to pursue certification. I have worked professionally as a librarian, financial consultant and tax auditor and served as Staff's cost of capital witness in rate case evidentiary proceedings in my current as well as in a past tenure as a Commission employee.

Q. What is the scope of your testimony in this case?

A. My testimony provides Staff's recommended capital structure, return on equity ("ROE") and overall rate of return ("ROR") for establishing the revenue requirements for Verde

Santa Fe Wastewater Company ("VSF" or "Company") in the Company's pending water rate application.

Q. Please provide a brief description of VSF.

A. VSF is a Class "C" Arizona public service corporation engaged in providing wastewater utility services in portions of Yavapai County, Arizona, pursuant to a certificate of convenience and necessity granted by the Commission. During the test year ending December 31, 2012, VSF served approximately 950 wastewater connections.

Summary of Testimony and Recommendations

Q. Briefly summarize how Staff's cost of capital testimony is organized.

A. Staff's cost of capital testimony is presented in ten sections. Section I is this introduction. Section II discusses the concept of weighted average cost of capital ("WACC"). Section III presents the concept of capital structure and presents Staff's recommended capital structure for VSF in this proceeding. Section IV presents Staff's cost of debt for VSF. Section V discusses the concepts of ROE and risk. Section VI presents the methods employed by Staff to estimate VSF's ROE. Section VII presents the findings of Staff's ROE analysis. Section VIII presents Staff's final cost of equity estimates for VSF. Section IX presents Staff's ROR recommendation. Finally, Section X presents Staff's comments on the direct testimony of the Company's witness, Mr. Thomas J. Bourassa.

Q. Have you prepared any exhibits to accompany your testimony?

A. Yes. I prepared nine schedules (JAC-1 to JAC-9) which support Staff's cost of capital analysis.

Q. What is Staff's recommended rate of return for VSF?

A. Staff recommends a 9.6 percent overall ROR, as shown in Schedule JAC-1. Staff's ROR recommendation is based on the following: (1) a capital structure composed of 0.0 percent debt and 100.0 percent equity; and (2) a cost of equity of 9.6 percent, calculated as the simple average of the two cost of equity estimates for the sample companies derived from Staff's discounted cash flow ("DCF") estimation methodologies (8.6 percent from Staff's constant growth DCF model and 9.4 percent from Staff's multi-stage DCF model), plus the adoption of a 60 basis point upward economic assessment adjustment.

Staff continues to develop and analyze the indicated cost of equity estimates derived from the two capital asset pricing model ("CAPM") estimation methodologies historically considered and relied upon by Staff. However, at the present time Staff is recommending that the Commission de-emphasize the CAPM driven results due to the continuing divergence of the CAPM-indicated cost of equity results relative to those derived by the DCF model.

Q. Mr. Cassidy, briefly explain why the cost of equity estimates derived from the CAPM have become problematic in today's economic environment.

A. In an effort to recover from the economic recession of 2008, the United States Federal Reserve ("the Fed") initiated a monetary policy intended to stimulate economic growth and reduce unemployment by keeping the federal funds rate at a level between 0 to ¼ percent.[1] The federal funds rate is the central bank's key tool to spur the economy and a low rate is thought to encourage spending by making it cheaper to borrow money. In addition, in an effort to put downward pressure on longer-term interest rates, the Fed

[1] The federal funds rate is the interest rate charged to banks by the Fed for overnight transfers of funds.

initiated a policy of quantitative easing[2] wherein the U.S. central bank would purchase U.S. Treasury mortgage-backed securities by reinvesting the principal payments from its holdings of agency debt and agency mortgage-backed securities, and of rolling over maturing Treasury securities at auction.[3] As a consequence, the low interest rate environment engineered by the Fed has compelled investors to seek out higher yields on investment wherever they may be found, resulting in the equity markets having recently achieved new all-time highs[4] and forecasted dividend yields reaching new lows.[5] At present, these factors, in combination with one another, have led to abnormally low cost of equity estimates being obtained from the CAPM model. Accordingly, in Staff's judgment the cost of equity estimates derived from the CAPM should not be given their traditional weighting for purposes of setting rates until such time that market conditions change.

VSF's Proposed Overall Rate of Return

Q. Briefly summarize VSF's proposed capital structure, cost of debt, ROE and overall ROR for this proceeding.

A. Table 1 summarizes the Company's proposed capital structure, cost of debt, ROE and overall ROR in this proceeding:

[2] Quantitative easing is an unconventional monetary policy in which a central bank purchases government securities or other securities from the market in order to lower interest rates and increase the money supply. Quantitative easing increases the money supply by flooding financial institutions with capital in an effort to promote increased lending and liquidity. Quantitative easing is considered when short-term interest rates are at or approaching zero, and does not involve the printing of new banknotes.

[3] Beginning in February 2014, the Committee will add to its holdings of agency mortgage-backed securities at a pace of $30 billion per month rather than $35 billion per month, and will add to its holdings of longer-term Treasury securities at a pace of $35 billion per month rather than $40 billion per month. (http://www.federalreserve.gov/newsevents/press/monetary/20140129a.htm)

[4] The Dow Jones Industrial Average closed above 16,000 for the first time ever on November 27, 2013 (16,097.33), and reached an all-time intra-day high of 16,588.25 on December 31, 2013. Similarly, the S&P 500 Index recently reached a new all-time high of 1,849.44, and closed at 1837.88 on January 7, 2014 (Source: CNNMoney).

[5] As reported in the *Value Line Investment Survey, Summary & Index*, the median estimated dividend yield (next 12 months) of all dividend paying stocks under its review recently reached a low of 1.9 percent, and is currently at 2.0 percent (*Value Line*, February 21, 2014 issue).

Table 1

	Weight	Cost	Weighted Cost
Long-term Debt	0.0%	0.0%	0.0%
Common Equity	100.0%	11.0%	11.0%
Cost of Capital/ROR			**11.0%**

VSF is proposing an overall rate of return of 11.0 percent.

II. THE WEIGHTED AVERAGE COST OF CAPITAL

Q. Briefly explain the cost of capital concept.

A. The cost of capital is the opportunity cost of choosing one investment over others with equivalent risk. In other words, the cost of capital is the return that stakeholders expect for investing their financial resources in a determined business venture over another business venture.

Q. What is the overall cost of capital?

A. The cost of capital to a company issuing a variety of securities (i.e., stock and indebtedness) is an average of the cost rates on all issued securities adjusted to reflect the relative amounts for each security in the company's entire capital structure. Thus, the overall cost of capital to a firm is its weighted average cost of capital ("WACC").

Q. How is the WACC calculated?

A. The WACC is calculated by adding the weighted expected returns of a firm's securities. The WACC formula is:

Equation 1.

$$WACC = \sum_{i=1}^{n} W_i * r_i$$

In this equation, W_i is the weight given to the i^{th} security (the proportion of the i^{th} security relative to the portfolio) and r_i is the expected return on the i^{th} security.

Q. Can you provide an example demonstrating application of Equation 1?

A. Yes. For this example, assume that an entity has a capital structure composed of 60 percent debt and 40 percent equity. Also, assume that the embedded cost of debt is 6.0 percent and the expected return on equity, i.e., the cost of equity, is 10.5 percent. Calculation of the WACC is as follows:

WACC = (60% * 6.0%) + (40% * 10.5%)

WACC = 3.60% + 4.20%

WACC = 7.80%

The weighted average cost of capital in this example is 7.80 percent. The entity in this example would need to earn an overall rate of return of 7.80 percent to cover its cost of capital.

III. CAPITAL STRUCTURE

Background

Q. Please explain the capital structure concept.

A. The capital structure of a firm is the relative proportions of each type of security: short-term debt, long-term debt (including capital leases), preferred stock and common stock that are used to finance the firm's assets.

Q. How is the capital structure expressed?

A. The capital structure of a company is expressed as the percentage of each component of the capital structure (capital leases, short-term debt, long-term debt, preferred stock and common stock) relative to the entire capital structure.

As an example, the capital structure for an entity that is financed by $20,000 of short-term debt, $85,000 of long-term debt (including capital leases), $15,000 of preferred stock and $80,000 of common stock is shown in Table 2.

Table 2

Component			%
Short-Term Debt	$20,000	($20,000/$200,000)	10.0%
Long-Term Debt	$85,000	($85,000/$200,000)	42.5%
Preferred Stock	$15,000	($15,000/$200,000)	7.5%
Common Stock	$80,000	($80,000/$200,000)	40.0%
Total	$200,000		100%

The capital structure in this example is composed of 10.0 percent short-term debt, 42.5 percent long-term debt, 7.5 percent preferred stock and 40.0 percent common stock.

VSF's Capital Structure

Q. What capital structure does VSF propose for purposes of this proceeding?

A. The Company proposes a capital structure composed of 0.0 percent debt and 100 percent equity. VSF's proposed capital structure reflects the Company's actual capital structure as of the December 31, 2012 test-year end.[6]

[6] *See* Bourassa Direct, p. 2, lines 10-11, and Schedule D-1.

Q. How does VSF's proposed capital structure compare to the capital structures of publicly-traded water utilities?

A. Schedule JAC-4 shows the capital structures of seven publicly-traded water companies ("sample water companies" or "sample water utilities") as of December 2012. The average capital structure for the sample water utilities is comprised of approximately 50.3 percent debt and 49.7 percent equity.

Q. Explain why Staff is not recommending a hypothetical Capital Structure.

A. Staff is not recommending a hypothetical Capital Structure in this case because the Company does not have access to the capital markets.

Staff's Capital Structure

Q. What is Staff's recommended capital structure for VSF?

A. Staff recommends a capital structure composed of 0.0 percent debt and 100.0 percent equity. Staff's recommended capital structure reflects the Company's actual capital structure as of the December 31, 2012 test-year end.

IV. COST OF DEBT

Q. What is the cost of debt proposed by the Company in this proceeding?

A. Because the Company's capital structure consists of 100.0 percent equity capital, the cost of debt is 0.0 percent.

V. RETURN ON EQUITY

Background

Q. Please define the term "cost of equity capital."

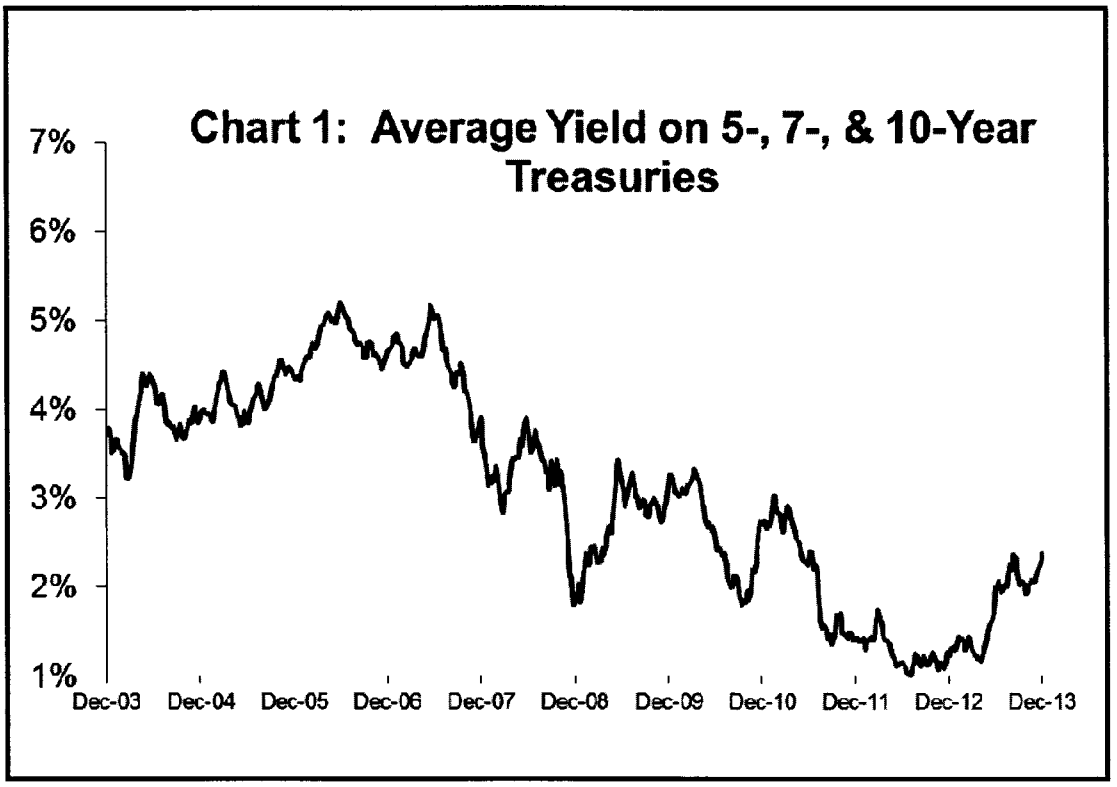
A. The cost of equity is the rate of return that investors expect to earn on their investment in a business entity given its risk. In other words, the cost of equity to the entity is the investors' expected rate of return on other investments of similar risk. As investors have a wide selection of stocks to choose from, they will choose stocks with similar risks but higher returns. Therefore, the market determines the entity's cost of equity.

Q. Is there a correlation between interest rates and the cost of equity?

A. Yes, there is a positive correlation between interest rates and the cost of equity, as the two tend to move in the same direction.

Q. What has been the general trend of interest rates in recent years?

A. A chronological chart of interest rates is a good tool to show interest rate history and identify trends. Chart 1 graphs intermediate U.S. treasury rates from December 26, 2003 to December 27, 2013.

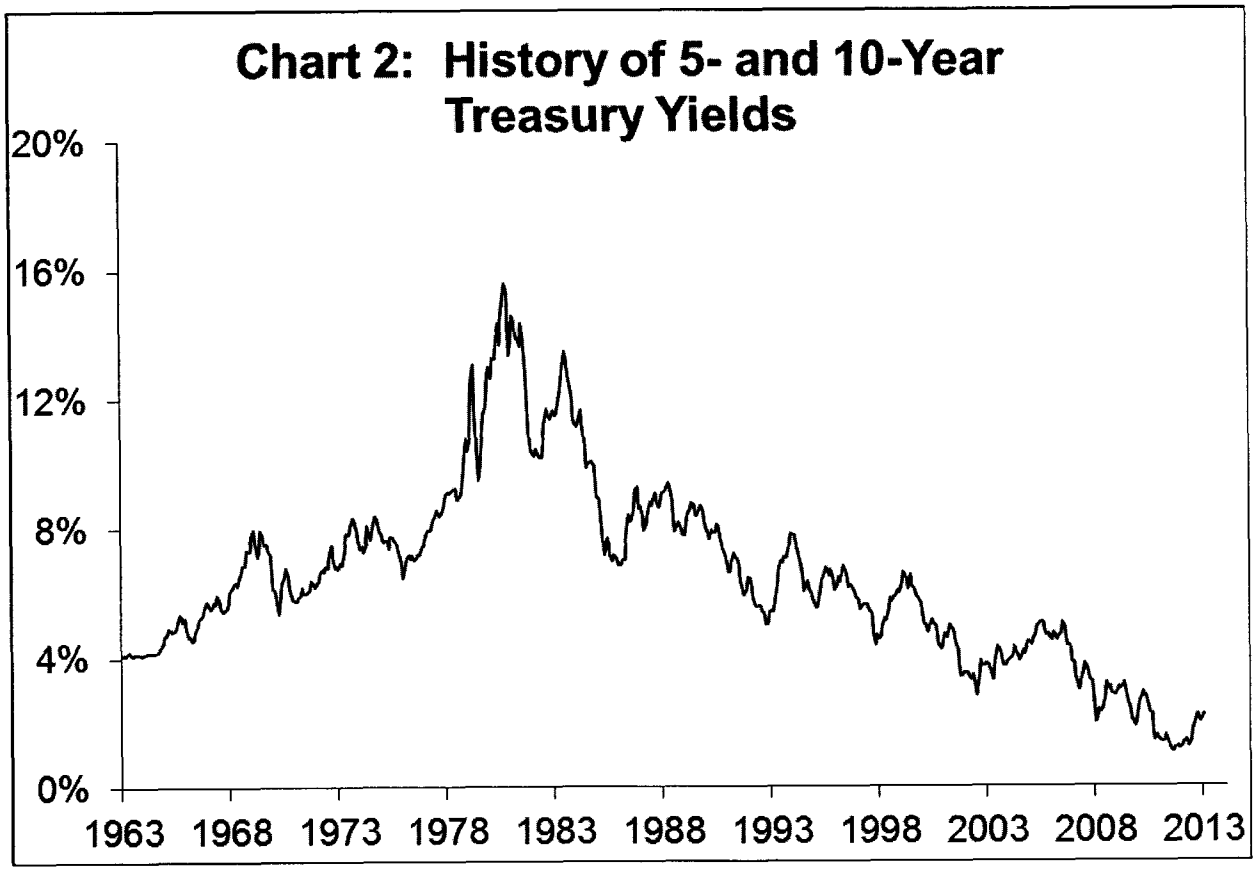


As shown in Chart 1, intermediate-term interest rates trended up from 2004 through mid-2007, trended downward through 2012, and have trended upward since that time.

Q. What has been the general trend in interest rates longer term?

A. U.S. Treasury rates from December 1963-December 2013 are shown in Chart 2. The chart shows that over this 50-year period of time, interest rates trended upward for the first twenty years, and have generally trended downward since that time, with the yield on 5- and 10-year Treasury instruments having risen since reaching all-time lows in July 2012.[7]

[7] U.S. Department of the Treasury, Federal Reserve System (http://www.federalreserve.gov/releases/h15/data.htm)



Source: Federal Reserve

Q. Do these trends have relevance to the cost of equity?

A. Yes. As previously noted, interest rates and the cost of equity tend to move in the same direction; therefore, it can be concluded that the cost of equity has declined over the 30-year period, 1984-2013.

Q. Do actual returns represent the cost of equity?

A. No. The cost of equity represents investors' *expected* returns and not realized returns.

Risk

Q. Please define risk in relation to cost of capital.

A. Risk, as it relates to an investment, is the variability or uncertainty of the returns on a particular security. Investors are risk averse and require a greater potential return to invest in relatively greater risk opportunities, i.e., investors require compensation for taking on additional risk. Risk is generally separated into two components. Those components are market risk (systematic risk) and non-market risk (diversifiable risk or firm-specific risk).

Q. What is market risk?

A. Market risk, or systematic risk, is the risk associated with an investment that cannot be reduced through diversification. Market risk stems from factors that affect all securities, such as recessions, war, inflation and high interest rates. These factors affect the entire market. However, market risk does not impact each security to the same degree.

Q. Please define business risk.

A. Business risk is the fluctuation of earnings inherent in a firm's operations and environment, such as competition and adverse economic conditions, which may impair its ability to provide returns on investment. Companies in the same or similar line of business tend to experience the same fluctuations in business cycles.

Q. Please define financial risk.

A. Financial risk is the fluctuation of earnings inherent in the use of debt financing that may impair a firm's ability to provide adequate returns; the higher the percentage of debt in a company's capital structure, the greater its exposure to financial risk.

Q. Do business risk and financial risk affect the cost of equity?

A. Yes.

Q. Is a firm subject to any other risk?

A. Yes. Firms are also subject to unsystematic or firm-specific risk. Examples of unsystematic risk include losses caused by labor problems, nationalization of assets, loss of a big client or weather conditions. However, investors can eliminate firm-specific risk by holding a diverse portfolio; thus, it is not of concern to diversified investors.

Q. How does VSF's financial risk exposure compare to that of Staff's sample group of water companies?

A. JAC-4 shows the capital structures of the seven sample water companies as of December 2012, and VSF's capital structure as of the test year ending December 31, 2012. As shown, the sample water utilities were capitalized with approximately 50.3 percent debt and 49.7 percent equity, while VSF's capital structure consists of 0.0 percent debt and 100.0 percent equity. Thus, because VSF has no debt in its capital structure, it has no exposure to financial risk, while Staff's sample companies do have exposure to financial risk.

Q. Is the cost of equity affected by firm-specific risk?

A. No. Since firm-specific risk can be eliminated through diversification, it does not affect the cost of equity.

Q. Can investors expect additional returns for firm-specific risk?

A. No. Investors who hold diversified portfolios can effectively eliminate firm-specific risk and, consequently, do not require any additional return. Since investors who choose to be

less than fully-diversified must compete in the market with fully-diversified investors, the former cannot expect to be compensated for unique risk.

VI. ESTIMATING THE COST OF EQUITY

Introduction

Q. Did Staff directly estimate the cost of equity for VSF?

A. No. Since VSF is not a publicly-traded company, Staff is unable to directly estimate its cost of equity due to the lack of firm-specific market data. Instead, Staff estimated the Company's cost of equity indirectly, using a representative sample group of publicly-traded water utilities as a proxy, taking the average of the sample group to reduce the sample error resulting from random fluctuations in the market at the time the information is gathered.

Q. What sample companies did Staff select as proxies for VSF?

A. Staff's sample consists of the following seven publicly-traded water utilities: American States Water, California Water, Aqua America, Connecticut Water Service, Middlesex Water, SJW Corporation and York Water. Staff selected these companies because they are publicly-traded and receive the majority of their earnings from regulated operations.

Q. What models did Staff implement to estimate VSF's cost of equity?

A. Staff used two variations of the DCF model, both of which are market-based, to estimate the cost of equity for VSF: the constant-growth DCF model and the multi-stage DCF model.

Q. Please explain why Staff chose the DCF model.

A. Staff chose to use the DCF model because it is a widely-recognized market-based model and has been used extensively to estimate the cost of equity. For the reasons noted earlier, Staff has not incorporated estimates derived from the CAPM into its cost of equity analysis for VSF. An explanation of the DCF model is provided below.

Discounted Cash Flow Model Analysis

Q. Please provide a brief summary of the theory upon which the DCF method of estimating the cost of equity is based.

A. The DCF method of stock valuation is based on the theory that the value of an investment is equal to the sum of the future cash flows generated from the aforementioned investment discounted to the present time. This method uses expected dividends, market price and dividend growth rate to calculate the cost of capital. Professor Myron Gordon pioneered the DCF method in the 1960s. The DCF method has become widely used to estimate the cost of equity for public utilities due to its theoretical merit and its simplicity. Staff used the financial information for the relevant seven sample companies in the DCF model and averaged the results to determine an estimated cost of equity for the sample companies.

Q. Does Staff use more than one version of the DCF?

A. Yes. Staff uses two versions of the DCF model: the constant-growth DCF and the multi-stage or non-constant growth DCF. The constant-growth DCF assumes that an entity's dividends will grow indefinitely at the same rate. The multi-stage growth DCF model assumes the dividend growth rate will change at some point in the future.

The Constant-Growth DCF

Q. What is the mathematical formula used in Staff's constant-growth DCF analysis?

A. The constant-growth DCF formula used in Staff's analysis is:

Equation 2:

$$K = \frac{D_1}{P_0} + g$$

where:
K = the cost of equity
D_1 = the expected annual dividend
P_0 = the current stock price
g = the expected infinite annual growth rate of dividends

Equation 2 assumes that the entity has a constant earnings retention rate and that its earnings are expected to grow at a constant rate. According to Equation 2, a stock with a current market price of $10 per share, an expected annual dividend of $0.45 per share and an expected dividend growth rate of 3.0 percent per year has a cost of equity to the entity of 7.5 percent reflected by the sum of the dividend yield ($0.45/ $10 = 4.5 percent) and the 3.0 percent annual dividend growth rate.

Q. How did Staff calculate the expected dividend yield (D_1/P_0) component of the constant-growth DCF formula?

A. Staff calculated the expected yield component of the DCF formula by dividing the expected annual dividend (D_1) by the spot stock price (P_0) after the close of market on January 15, 2014, as reported by *MSN Money*.

Q. Why did Staff use the January 15, 2014, spot price rather than a historical average stock price to calculate the dividend yield component of the DCF formula?

A. The current, rather than historic, market price is used in order to be consistent with financial theory. In accordance with the Efficient Market Hypothesis, the current stock price is reflective of all available information on a stock, and as such reveals investors' expectations of future returns.

Q. How did Staff estimate the dividend growth (g) component of the constant-growth DCF model represented by Equation 2?

A. The dividend growth component used by Staff is determined by the average of six different estimation methods, as shown in Schedule JAC-8. Staff calculated historical and projected growth estimates on dividend-per-share ("DPS"),[8] earnings-per-share ("EPS")[9] and sustainable growth bases.

Q. Why did Staff examine EPS growth to estimate the dividend growth component of the constant-growth DCF model?

A. Historic and projected EPS growth are used because dividends are related to earnings. Dividend distributions may exceed earnings in the short run, but cannot continue indefinitely. In the long term, dividend distributions are dependent on earnings.

Q. How did Staff estimate historical DPS growth?

A. Staff estimated historical DPS growth by calculating a compound annual DPS growth rate for each of its sample companies over the 10-year period, 2003-2013. As shown in Schedule JAC-5, the average historical DPS growth rate for the sample was 3.7 percent.

[8] Derived from information provided by *Value Line.*
[9] Derived from information provided by *Value Line.*

Q. How did Staff estimate projected DPS growth?

A. Staff calculated an average of the projected DPS growth rates for the sample water utilities from *Value Line* through the period, 2016-2018. The average projected DPS growth rate is 6.1 percent, as shown in Schedule JAC-5.

Q. How did Staff estimate historical EPS growth rate?

A. Staff estimated historical EPS growth by calculating a compound annual EPS growth rate for each of its sample companies over the 10-year period, 2003-2013. As shown in Schedule JAC-5, the average historical EPS growth rate for the sample was 6.5 percent.

Q. How did Staff estimate projected EPS growth?

A. Staff calculated an average of the projected EPS growth rates for the sample water utilities from *Value Line* through the period, 2016-2018. The average projected EPS growth rate is 6.1 percent, as shown in Schedule JAC-5.

Q. How does Staff calculate its historical and projected sustainable growth rates?

A. Historical and projected sustainable growth rates are calculated by adding their respective retention growth rate terms (br) to their respective stock financing growth rate terms (vs), as shown in Schedule JAC-6.

Q. What is retention growth?

A. Retention growth is the growth in dividends due to the retention of earnings. The retention growth concept is based on the theory that dividend growth cannot be achieved unless the company retains and reinvests a portion of its earnings. The retention growth is used in Staff's calculation of sustainable growth shown in Schedule JAC-6.

Q. What is the formula for the retention growth rate?

A. The retention growth rate is the product of the retention ratio and the book/accounting return on equity. The retention growth rate formula is:

Equation 3 :

$$\text{Retention Growth Rate} = br$$

where : b = the retention ratio (1 – dividend payout ratio)
r = the accounting/book return on common equity

Q. How did Staff calculate the average historical retention growth rate (br) for the sample water utilities?

A. Staff calculated the mean of the 10-year average historical retention rate for each sample company over the period, 2002-2012. As shown in Schedule JAC-6, the historical average retention (br) growth rate for the sample is 2.7 percent.

Q. How did Staff estimate its projected retention growth rate (br) for the sample water utilities?

A. Staff used the retention growth projections for the sample water utilities for the period, 2016-2018, from *Value Line.* As shown in Schedule JAC-6, the projected average retention growth rate for the sample companies is 4.0 percent.

Q. When can retention growth provide a reasonable estimate of future dividend growth?

A. The retention growth rate is a reasonable estimate of future dividend growth when the retention ratio is reasonably constant and the entity's market price to book value ("market-to-book ratio") is expected to be 1.0. The average retention ratio has been reasonably

constant in recent years. However, the market-to-book ratio for the sample water utilities is 2.2, notably higher than 1.0, as shown in Schedule JAC-7.

Q. Is there any financial implication of a market-to-book ratio greater than 1.0?

A. Yes. A market-to-book ratio greater than 1.0 implies that investors expect an entity to earn an accounting/book return on its equity that exceeds its cost of equity. The relationship between required returns and expected cash flows is readily observed in the fixed securities market. For example, assume an entity contemplating issuance of bonds with a face value of $10 million at either 6 percent or 8 percent and, thus, paying annual interest of $600,000 or $800,000, respectively. Regardless of investors' required return on similar bonds, investors will be willing to pay more for the bonds if issued at 8 percent than if the bonds are issued at 6 percent. For example, if the current interest rate required by investors is 6 percent, then they would bid $10 million for the 6 percent bonds and more than $10 million for the 8 percent bonds. Similarly, if equity investors require a 9 percent return and expect an entity to earn accounting/book returns of 13 percent, the market will bid up the price of the entity's stock to provide the required return of 9 percent.

Q. How has Staff generally recognized a market-to-book ratio exceeding 1.0 in its cost of equity analyses in recent years?

A. Staff has assumed that investors expect the market-to-book ratio to remain greater than 1.0. Given that assumption, Staff has added a stock financing growth rate (vs) term to the retention ratio (br) term to calculate its historical and projected sustainable growth rates.

Q. Do the historical and projected sustainable growth rates Staff uses to develop its DCF cost of equity in this case continue to include a stock financing growth rate term?

A. Yes.

Q. What is stock financing growth?

A. Stock financing growth is the increase in an entity's dividends attributable to the sale of stock by that entity. Stock financing growth is a concept derived by Myron Gordon and discussed in his book *The Cost of Capital to a Public Utility.*[10] Stock financing growth is the product of the fraction of the funds raised from the sale of stock that accrues to existing shareholders (v) and the fraction resulting from dividing the funds raised from the sale of stock by the existing common equity (s).

Q. What is the mathematical formula for the stock financing growth rate?

A. The mathematical formula for stock financing growth is:

Equation 4:

$$\text{Stock Financing Growth} = vs$$

where: v = Fraction of the funds raised from the sale of stock that accrues to existing shareholders

s = Funds raised from the sale of stock as a fraction of the existing common equity

[10] Gordon, Myron J. *The Cost of Capital to a Public Utility.* MSU Public Utilities Studies, Michigan, 1974. pp 31-35.

Q. How is the variable *v* presented above calculated?

A. Variable *v* is calculated as follows:

Equation 5:

$$v = 1 - \left(\frac{book\ value}{market\ value} \right)$$

$$v = 1 - \left(\frac{30}{45} \right)$$

For example, assume that a share of stock has a $30 book value and is selling for $45. Then, to find the value of *v*, the formula is applied:

In this example, *v* is equal to 0.33.

Q. How is the variable *s* presented above calculated?

A. Variable *s* is calculated as follows:

Equation 6:

$$s = \frac{\text{Funds raised from the issuance of stock}}{\text{Total existing common equity before the issuance}}$$

For example, assume that an entity has $150 in existing equity, and it sells $30 of stock. Then, to find the value of *s*, the formula is applied:

$$s = \left(\frac{30}{150} \right)$$

In this example, *s* is equal to 20.0 percent.

Q. What is the *vs* term when the market-to-book ratio is equal to 1.0?

A. A market-to-book ratio of 1.0 reflects that investors expect an entity to earn a book/accounting return on their equity investment equal to the cost of equity. When the market-to-book ratio is equal to 1.0, none of the funds raised from the sale of stock by the entity accrues to the benefit of existing shareholders, i.e., the term *v* is equal to zero (0.0). Consequently, the *vs* term is also equal to zero (0.0). When stock financing growth is zero, dividend growth depends solely on the *br* term.

Q. What is the effect of the *vs* term when the market-to-book ratio is greater than 1.0?

A. A market-to-book ratio greater than 1.0 reflects that investors expect an entity to earn a book/accounting return on their equity investment greater than the cost of equity. Equation 5 shows that, when the market-to-book ratio is greater than 1.0, the *v* term is also greater than zero. The excess by which new shares are issued and sold over book value per share of outstanding stock is a contribution that accrues to existing stockholders in the form of a higher book value. The resulting higher book value leads to higher expected earnings and dividends. Continued growth from the *vs* term is dependent upon the continued issuance and sale of additional shares at a price that exceeds book value per share.

Q. What *vs* estimate did Staff calculate from its analysis of the sample water utilities?

A. Staff estimated an average stock financing growth of 2.4 percent for the sample water utilities, as shown in Schedule JAC-6.

Q. What would occur if an entity had a market-to-book ratio greater than 1.0 as a result of investors expecting earnings to exceed its cost of equity, and subsequently experienced newly-authorized rates equal only to its cost of equity?

A. Holding all other factors constant, one would expect market forces to move the company's stock price lower, closer to a market-to-book ratio of 1.0, to reflect investor expectations of reduced expected future cash flows.

Q. If the average market-to-book ratio of Staff's sample water utilities were to fall to 1.0 due to authorized ROEs equaling their cost of equity, would inclusion of the vs term be necessary to Staff's constant-growth DCF analysis?

A. No. As discussed above, when the market-to-book ratio is equal to 1.0, none of the funds raised from the sale of stock by the entity accrues to the benefit of existing shareholders because the *v* term equals to zero and, consequently, the *vs* term also equals zero. When the market-to-book ratio equals 1.0, dividend growth depends solely on the *br* term. Staff's inclusion of the *vs* term assumes that the market-to-book ratio continues to exceed 1.0 and that the water utilities will continue to issue and sell stock at prices above book value with the effect of benefitting existing shareholders.

Q. What are Staff's historical and projected sustainable growth rates?

A. Staff's estimated historical sustainable growth rate is 5.2 percent based on an analysis of earnings retention for the sample water companies. Staff's projected sustainable growth rate is 6.4 percent based on retention growth projected by *Value Line.* Schedule JAC-6 presents Staff's estimates of the sustainable growth rate.

Q. What is Staff's expected infinite annual growth rate in dividends?

A. Staff's expected dividend growth rate (g) is 5.7 percent, which is the average of historical and projected DPS, EPS, and sustainable growth estimates. Staff's calculation of the expected infinite annual growth rate in dividends is shown in Schedule JAC-8.

Q. What is Staff's constant-growth DCF estimate for the sample utilities?

A. Staff's constant-growth DCF estimate is 8.6 percent, as shown in Schedule JAC-3.

The Multi-Stage DCF

Q. Why did Staff implement the multi-stage DCF model to estimate VSF's cost of equity?

A. Staff generally uses the multi-stage DCF model to consider the assumption that dividends may not grow at a constant rate. The multi-stage DCF uses two stages of growth; the first stage (near-term) having a duration of four years, followed by a second stage (long-term) of constant growth.

Q. What is the mathematical formula for the multi-stage DCF?

A. The multi-stage DCF formula is shown in the following equation:

Equation 7 :

$$P_0 = \sum_{t=1}^{n} \frac{D_t}{(1+K)^t} + \frac{D_n(1+g_n)}{K-g_n}\left[\frac{1}{(1+K)}\right]^n$$

Where : P_0 = current stock price
D_t = dividends expected during stage 1
K = cost of equity
n = years of non – constant growth
D_n = dividend expected in year n
g_n = constant rate of growth expected after year n

Q. What steps did Staff take to implement its multi-stage DCF cost of equity model?

A. First, Staff projected future dividends for each of the sample water utilities using near-term and long-term growth rates. Second, Staff calculated the rate (cost of equity) which equates the present value of the forecasted dividends to the current stock price for each of the sample water utilities. Lastly, Staff calculated an overall sample average cost of equity estimate.

Q. How did Staff calculate near-term (stage-1) growth?

A. The stage-1 growth rate is based on *Value Line*'s projected dividends for the next twelve months, when available, and on the average dividend growth (g) rate of 5.7 percent, calculated in Staff's constant DCF analysis for the remainder of the stage.

Q. How did Staff estimate long-term (stage-2) growth?

A. Staff calculated the stage-2 growth rate using the arithmetic mean rate of growth in Gross Domestic Product ("GDP") from 1929 to 2012.[11] Using the GDP growth rate assumes that the water utility industry is expected to grow at the same rate as the overall economy.

Q. What is the historical GDP growth rate that Staff used to estimate stage-2 growth?

A. Staff used 6.5 percent to estimate the stage-2 growth rate.

Q. What is Staff's multi-stage DCF estimate for the sample utilities?

A. Staff's multi-stage DCF estimate is 9.4 percent, as shown in Schedule JAC-3.

Q. What is Staff's overall DCF estimate for the sample utilities?

A. Staff's overall DCF estimate is 9.0 percent. Staff calculated the overall DCF estimate by averaging the constant growth DCF (8.6%) and multi-stage DCF (9.4%) estimates, as shown in Schedule JAC-3.

VII. SUMMARY OF STAFF'S COST OF EQUITY ANALYSIS

Q. What is the result of Staff's constant-growth DCF analysis to estimate the cost of equity for the sample water utilities?

A. Schedule JAC-3 shows the result of Staff's constant-growth DCF analysis. The result of Staff's constant-growth DCF analysis is as follows:

$$k = 2.9\% + 5.7\%$$

$$k = \mathbf{8.6\%}$$

[11] www.bea.doc.gov.

Staff's constant-growth DCF estimate of the cost of equity for the sample water utilities is 8.6 percent.

Q. What is the result of Staff's multi-stage DCF analysis to estimate of the cost of equity for the sample utilities?

A. Schedule JAC-9 shows the result of Staff's multi-stage DCF analysis. The result of Staff's multi-stage DCF analysis is:

Company	**Equity Cost Estimate (k)**
American States Water	9.3%
California Water	9.4%
Aqua America	9.1%
Connecticut Water	9.3%
Middlesex Water	10.3%
SJW Corp	9.1%
York Water	9.2%
Average	**9.4%**

Staff's multi-stage DCF estimate of the cost of equity for the sample water utilities is 9.4 percent.

Q. What is Staff's overall DCF estimate of the cost of equity for the sample utilities?

A. Staff's overall DCF estimate of the cost of equity for the sample utilities is 9.0 percent. Staff calculated an overall DCF cost of equity estimate by averaging Staff's constant growth DCF (8.6 percent) and Staff's multi-stage DCF (9.4 percent) estimates, as shown in Schedule JAC-3.

VIII. FINAL COST OF EQUITY ESTIMATES FOR VSF

Q. Please compare VSF's capital structure to that of Staff's seven sample companies.

A. The average capital structure for the sample water utilities is composed of 50.3 percent debt and 49.7 percent equity, as shown in Schedule JAC-4. In contrast, VSF's capital structure is composed of 0.0 percent debt and 100.0 percent equity. Since the VSF does not employ debt capital to fund its rate base, VSF's stockholders bear *less* financial risk than do equity shareholders of the sample utilities.

Q. Does VSF's decreased financial risk affect its cost of equity?

A. Yes. As previously discussed, financial risk is a component of market risk and investors require compensation for market risk. Since VSF's financial risk exposure is less than that of the average sample water companies, its cost of equity is lower than that of the sample water companies.

Q. Is Staff recommending a downward financial risk adjustment to the Company's cost of equity to recognize its lower financial risk?

A. No. Staff normally applies two criteria in assessing whether application of a downward financial risk adjustment is appropriate. The first consideration is whether the utility has a reasonably economical capital structure. Staff considers a capital structure composed of no more than 60 percent equity to meet this condition. If equity exceeds 60 percent, as it does for VSF, Staff considers application of a downward financial risk adjustment to be appropriate if the utility meets the second criteria. The second condition is whether the utility has access to equity capital markets. Although VSF's equity exceeds 60 percent, it does not have access to the equity capital markets; accordingly, Staff is not recommending a downward financial risk adjustment to the Company's cost of equity. Staff's methodology for applying a downward financial risk adjustment encourages a utility with

access to the equity capital markets to use that access to manage its capital structure with economic efficiency and encourages a utility that lacks access to the equity capital markets to maintain a healthy capital structure.

Q. Did Staff consider factors other than the results of its technical models in its cost of equity analysis?

A. Yes. In consideration of the relatively uncertain status of the economy and the market that currently exists, Staff is proposing an upward economic assessment adjustment to the cost of equity. In this case, Staff recommends a 60 basis point (0.6 percent) upward economic assessment adjustment, as shown in Schedule JAC-3.

Q. What is Staff's ROE estimate for VSF?

A. Staff determined an ROE estimate of 9.0 percent for VSF based on cost of equity estimates for the sample companies of 8.6 percent for the constant-growth DCF model and 9.4 percent for the multi-stage DCF model. Staff recommends adoption of a 60 basis point upward economic assessment adjustment, resulting in a 9.6 percent Staff-recommended cost of equity, as shown in Schedule JAC-3.

IX. RATE OF RETURN RECOMMENDATION

Q. What overall rate of return did Staff determine for VSF?

A. Staff determined a 9.6 percent ROR for the Company, as shown in Schedule JAC-1 and the following table:

Table 3

	Weight	Cost	Weighted Cost
Long-term Debt	0.0%	0.0%	0.0%
Common Equity	100.0%	9.6%	9.6%
Overall ROR			**9.6%**

X. STAFF RESPONSE TO COMPANY'S COST OF CAPITAL WITNESS MR. THOMAS J. BOURASSA

Q. Please summarize Mr. Bourassa's analyses and recommendations.

A. Mr. Bourassa recommends an 11.0 percent ROE based on estimates derived from two constant growth DCF analyses (median estimate 8.5%), two CAPM analyses (median estimate 9.6%), and two Build-up risk premium models (median estimate 11.7%) designed as a check for reasonableness to his DCF and CAPM results, using a proxy sample of six publicly-traded water companies. He proposes a capital structure consisting of 0.0 percent debt and 100.0 percent equity. Mr. Bourassa determined that the cost of equity for publicly traded water utilities lies within the range of 8.5 percent to 11.7 percent, with the mid-point of his range being 10.1 percent. Mr. Bourassa makes no explicit adjustments to his 10.1 percent mid-point cost of equity estimate; however, in arriving at his recommended 11.0 percent cost of equity figure he gives consideration to (a) prospective economic conditions, (b) VSF's exposure to financial risk,[12] (c) VSF's small size, and (d) VSF's business risk relative to his sample companies.[13] His overall recommended rate of return for the Company is 11.0 percent.

[12] In his direct testimony (p. 3, lines 24-25), Mr. Bourassa makes reference to the "financial risks associated with the Company's pro forma capital structure." However, VSF has proposed its actual capital structure, and because that capital structure contains no debt, the Company has no exposure to financial risk.
[13] *See* Bourassa Direct, pp. 3-4 @ 23 – 1.

For purposes of his constant growth DCF analyses, Mr. Bourassa gives a 50 percent weight to the estimates derived from his Future Growth DCF model and a 50 percent weight to the estimates derived from his Past and Future Growth DCF Model. In his primary Future Growth DCF model, Mr. Bourassa relies exclusively on analysts' forecasts of EPS growth to estimate the dividend growth (g) component (See TJB Schedule D-4.6). In his Past and Future Growth DCF model, Mr. Bourassa estimates his dividend growth (g) rate by giving 50 percent weight to historical measures of growth in annual share price, book value, EPS and DPS over a five-year period, and 50 percent weight to the dividend growth rate obtained from his primary Future Growth DCF model (See TJB Schedule D-4.4). Thus, for purposes of the overall dividend growth (g) rate used in his constant growth DCF analyses, Mr. Bourassa effectively gives a 75 percent weight to the results obtained from analysts forecasts' for EPS growth and only a 25 percent weight to the results obtained from historical measures of dividend growth (See TJB Schedule D-4.8). In each of his two constant growth DCF analyses, Mr. Bourassa uses a 60-day average stock price to calculate the current dividend yield (D_0/P_0) (See TJB Schedule D-4.7).

For purposes of his CAPM analyses, Mr. Bourassa presents estimates based upon both historical and current market risk premia. In both, he uses a 4.15 percent forecasted risk free (R_f) rate based, in part, upon estimates from Value Line and Blue Chip Consensus Forecasts for the 30-year long-term Treasury yield covering the period, 2013-2015 (See TJB Schedule D-4.10).

Q. Does Staff have any comments on Mr. Bourassa's sole reliance on analysts' forecasts of EPS growth rates to estimate dividend growth rate (g) in his Future Growth DCF analysis?

A. Yes. Exclusive reliance on analysts' forecasts of earnings growth to forecast DPS is inappropriate because it assumes that investors do not look at other relevant information such as historical dividend and earnings growth. Generally, analysts' forecasts are known to be overly optimistic. Sole use of analysts' forecasts to calculate the expected dividend growth rate, (g), serves to inflate that component of the DCF model and, consequently, the estimated cost of equity. The appropriate growth rate to use in the DCF model is the dividend growth rate expected by *investors*, not by analysts. Investors are assumed to be rational, and as such will want to take into consideration all relevant available information prior to making an investment decision. Therefore, it is reasonable to assume that investors would consider both historical measures of past growth, as well as analysts' forecasts of future growth.

Q. Does the narrative of Mr. Bourassa's direct testimony state that he relies exclusively on analysts' forecasts of EPS growth to estimate the expected dividend growth rate (g) in his Future Growth DCF model?

A. No. Mr. Bourassa states only that "I have used analyst growth forecasts, where available,"[14] and that "I use analysts' forecasts of growth as a primary estimate of growth."[15] Only when referring to TJB Schedule D-4.6 does one learn that he has relied exclusively on analysts' forecasts of EPS growth to estimate the dividend growth (g) rate in his Future Growth DCF model.

[14] *See* Bourassa Direct, page 34, lines 6-7.
[15] *See* Bourassa Direct, page 34, lines 18-19.

Q. Does Staff have evidence to support its assertion that exclusive reliance on analysts' forecasts of earnings growth in the DCF model would result in inflated cost of equity estimates?

A. Yes. Experts in the financial community have commented on the optimism in analysts' forecasts of future earnings.[16] A study cited by David Dreman in his book *Contrarian Investment Strategies: The Next Generation* found that *Value Line* analysts were optimistic in their forecasts by 9 percent annually, on average for the 1987 – 1989 period. Another study conducted by David Dreman found that between 1982 and 1997, analysts overestimated the growth of earnings of companies in the S&P 500 by 188 percent.

Burton Malkiel, of Princeton University, conducted a study of the 1- and 5-year earnings forecasts made by some of the most respected names in the investment business. His results showed that when compared with actual earnings growth rates, the 5-year forecasts made by professional analysts were far less accurate than estimates derived from several naïve forecasting models, such as the long-run growth rate in national income. In the following excerpt from his book, *A Random Walk Down Wall Street*, Professor Malkiel discusses the results of his study:

> When confronted with the poor record of their five-year growth estimates, *the security analysts honestly, if sheepishly, admitted that five years ahead is really too far in advance to make reliable projections*. They protested that although long-term projections are admittedly important, they really ought to be judged on their ability to project earnings changes one year ahead. Believe it or not, it turned out that their one-year forecasts were even worse than their five-year projections.

[16] Seigel, Jeremy J. Stocks for the Long Run. 2002. McGraw-Hill. New York. p. 100. Dreman, David. *Contrarian Investment Strategies: The Next Generation*. 1998. Simon & Schuster. New York. pp. 97-98. Malkiel, Burton G. *A Random Walk Down Wall Street*. 2003. W.W. Norton & Co. New York. p. 175.
Testimony of Professors Myron J. Gordon and Lawrence I. Gould, consultant to the Trial Staff (Common Carrier Bureau), FCC Docket 79-63, p. 95.

> The analysts fought back gamely. They complained that it was unfair to judge their performance on a wide cross section of industries, because earnings for high-tech firms and various "cyclical" companies are notoriously hard to forecast. *"Try us on utilities," one analyst confidently asserted. At the time they were considered among the most stable group of companies because of government regulation. So we tried it and they didn't like it. Even the forecasts for the stable utilities were far off the mark.*[17] (Emphasis added)

Q. Are investors aware of the problems related to analysts' forecasts?

A. Yes. In addition to books, there are numerous published articles appearing in *The Wall Street Journal* and other financial publications that cast doubt on the accuracy of research analysts' forecasts.[18] Investors, being keenly aware of these inherent biases in forecasts, will use other methods to assess future growth.

Q. Should DPS growth be considered in a DCF analysis?

A. Yes. As previously stated in section VI of this testimony, the current market price of a stock is equal to the present value of all expected future dividends, not future earnings. Professor Jeremy Siegel from the Wharton School of Finance stated:

> Note that the price of the stock is always equal to the present value of all future *dividends* and not the present value of future earnings. Earnings not paid to investors can have value only if they are paid as dividends or other cash disbursements at a later date. Valuing stock as the present discounted value of future earnings is manifestly wrong and greatly overstates the value of the firm.[19]

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[17] Malkiel, Burton G. A Random Walk Down Wall Street. 2003. W.W. Norton & Co. New York. p. 175

[18] Smith, Randall & Craig, Suzanne. "Big Firms Had Research Ploy: Quiet Payments Among Rivals." *The Wall Street Journal*. April 30, 2003. Brown, Ken. "Analysts: Still Coming Up Rosy." *The Wall Street Journal*. January 27, 2003. p. C1. Karmin, Craig. "Profit Forecasts Become Anybody's Guess." *The Wall Street Journal*. January 21, 2003. p. C1. Gasparino, Charles. "Merrill Lynch Investigation Widens." *The Wall Street Journal*. April 11, 2002. p. C4. Elstein, Aaron. "Earnings Estimates Are All Over the Map." *The Wall Street Journal*. August 2, 2001. p. C1. Dreman, David. "Don't Count on those Earnings Forecasts." *Forbes*. January 26, 1998. p. 110.

[19] Seigel, Jeremy J. Stocks for the Long Run. 2002. McGraw-Hill. New York. P. 93.

For valuation purposes, therefore, earnings paid out in the form of a dividend have paramount relevancy to investors. Dividends, unlike earnings, cannot be manipulated or overstated. Thus, historical DPS growth should receive appropriate consideration when estimating the market cost of equity in the DCF model.

Q. How does Mr. Bourassa calculate the expected dividend growth (g) rate used in his Past and Future Growth DCF model?

A. As shown in TJB Schedule D-4.4, Mr. Bourassa estimates the expected dividend growth (g) rate in his Past and Future Growth DCF model[20] by providing a 50 percent weight[21] to historical measures of growth in average annual share price, book value, EPS and DPS for his sample companies over a five-year period[22] and a 50 percent weight[23] to the average of analysts' forecasts for EPS growth derived from his Future Growth DCF model.

Q. For purposes of his overall DCF estimate, what percentage weight does Mr. Bourassa allocate to the dividend growth (g) component derived from analysts' forecasts of EPS growth in his Future Growth DCF model?

A. Effectively, for purposes of his overall DCF estimate Mr. Bourassa allocates a 75 percent weight to the results derived from analysts' forecasts of EPS growth in his Future Growth DCF Model. As noted above, TJB Schedule D-4.4 presents the results of Mr. Bourassa's Past and Future Growth DCF model, which provides for an equal weighting (i.e., 50 percent) between historical and projected measures of dividend growth. However, as shown in TJB Schedule D-4.8, for purposes of his overall dividend growth (g) estimate,[24]

[20] *See* TJB Schedule D-4.4, Column 7.
[21] *See* TJB Schedule D-4.4, Column 5.
[22] In TJB Schedule D-4.5, Mr. Bourassa presents this same dividend growth information over a ten-year period, but elects not to use it for purposes of his recommended cost of equity.
[23] *See* TJB Schedule D-4.4, Column 6.
[24] *See* TJB Schedule D-4.8, Column 3.

Mr. Bourassa combines the average of his Past and Future Growth DCF estimate[25] with his average Future Growth DCF estimate.[26] In so doing, Mr. Bourassa effectively gives a 75 percent weight to the dividend growth (g) estimate derived from analysts' forecasts of EPS growth in his Future Growth DCF model and only a 25 percent weight to the dividend growth estimate derived from historical measures of growth in his Past and Future Growth DCF model.

Q. Does Staff have any comment on Mr. Bourassa's use of growth in average annual share price to estimate the expected dividend growth (g) component in his Past and Future Growth DCF model?

A. Yes. In and of itself, share price appreciation is not a determinant of dividend growth, and for this reason Staff considers its use as a growth parameter to be inappropriate. However, as Mr. Bourassa has utilized it as a growth parameter by which to estimate dividend growth, Staff would point out that in both his five- and ten-year historical growth DCF analyses, share price growth has exceeded that of dividend growth. Specifically, in his five-year historical growth analysis (See TJB Schedule D-4.4), average share price growth (5.80%) exceeds average DPS growth (3.33%) by 74.2 percent (((.0580/.0333) – 1) = 74.2%), and in his ten-year historical growth analysis (See TJB Schedule D-4.5), average share price growth (6.88%) exceeds average DPS growth (3.25%) by 111.7 percent (((.0688/.0325) – 1) = 111.7%).

[25] *See* TJB Schedule D-4.8, Line 8.
[26] *See* TJB Schedule D-4.8, Line 10.

Q. As it relates to the cost of equity, what is the significance of Mr. Bourassa's sample water companies having experienced share price growth in excess of DPS growth over both the last five- and ten-year periods?

A. Simply stated, it is an indication that the cost of equity for publicly-traded water utilities has fallen over each of the last 5- and 10-year periods. When the market price per share of common stock for a given firm rises faster than does the dividend paid on a per share basis, the dividend yield falls. As dividend yields fall, investors pay more for an equivalent unit of return on their investment, resulting in a lower cost of equity. Markets are efficient, and because prices for publicly traded stocks can rise only if investors are willing to bid up the share price, when share price growth exceeds DPS growth over a five- or ten-year period, the willingness of investors to continue to bid up share prices is reflective of investor expectations that market returns have fallen. Thus, Mr. Bourassa's use of share price growth increases his cost of equity estimate at a time when share price growth actually reflects a decrease in cost of equity. This incongruous outcome is the result of choosing an inappropriate parameter for dividend growth in the DCF model.

Q. Turning to Mr. Bourassa's CAPM analyses, does Staff consider the 8.61 percent[27] current market risk premium component in his current MRP CAPM model to be reflective of current market conditions?

A. No. As an input into his current market risk premium CAPM model, Mr. Bourassa employs *Value Line's* median 3-5 year price appreciation potential estimate to compute the market risk premium (MRP) component.[28] As shown in TJB Schedule D-4.11, Mr. Bourassa presents historical data covering the period December 2011-July 2013, and for purposes of his recommended 8.61 current MRP value, elects to use a 6-month average

[27] *See* TJB Schedule D-4.12, line 5.
[28] *See* TJB Schedule D-4.11, footnote 3.

estimate covering the period, February 2013-July 2013.[29] Staff conducted a check of *Value Line* data and found that during the 6-month period, February 2013-July 2013, the *Value Line* median 3-5 year price appreciation potential estimate averaged 46.4 percent. However, over the next 6-month period (i.e., August 2013-January 2014) *Value Line's* price appreciation potential estimate fell to an average of 33.7 percent. At present, *Value Line's* median price appreciation potential estimate sits at 35.0 percent.[30] Thus, given the methodology employed by Mr. Bourassa, the 8.61 percent market risk premium value used in his current MRP CAPM model appears to be overstated, and is not reflective of current market conditions.

Q. Would Staff care to comment further on Mr. Bourassa's CAPM results?

A. Yes, but only to point out that since filing his direct testimony, *Value Line* has issued its quarterly update for the water utility industry, and the sample average beta value for Mr. Bourassa's six sample companies has fallen from 0.71, to 0.70.[31]

Q. Although Mr. Bourassa makes no explicit adjustments to his 10.1 percent midpoint cost of equity estimate in arriving at his recommended 11.0 percent ROE, does Staff have any comment on the implicit upward adjustments he makes for financial risk and small size?

A. Yes. First, because VSF has no debt in its capital structure, the Company has no exposure to financial risk; hence, an upward adjustment for financial risk is unwarranted.[32] Second, while Staff would agree with the general proposition that smaller companies are riskier

[29] *See* TJB Schedule D-4.11, lines 25 and 30.
[30] *Value Line*, February 21, 2014.
[31] *Value Line*, January 17, 2014.
[32] *See* Bourassa Direct, p.3, lines 24-25, and Schedule D-1.

than larger companies, empirical research has demonstrated that a small company risk premium adjustment to the cost of equity is unwarranted for regulated utilities. Annie Wong, of Western Connecticut State University, conducted a study on utility stocks to determine if the so-called size effect exists in the utility industry, and she writes as follows:

> The fact that the two samples show different, though weak, results indicates that utility and industrial stocks do not share the same characteristics. First, given firm size, utility stocks are consistently less risky than industrial stocks. Second, industrial betas tend to decrease with firm size but utility betas do not. These findings may be attributed to the fact that all public utilities operate in an environment with regional monopolistic power and regulated financial structure. As a result, the business and financial risks are very similar among the utilities regardless of their size. Therefore, utility betas would not necessarily be expected to be related to firm size.
>
> The object of this study is to examine if the size effect exists in the utility industry. After controlling for equity values, there is some weak evidence that firm size is a missing factor from the CAPM for the industrial but not for the utility stocks. *This implies that although the size phenomenon has been strongly documented for industrials, the findings suggest that there is no need to adjust for the firm size in utility regulations.* [emphasis added].[33]

To underscore this point, Paschall and Hawkins write as follows:

> A size premium does not automatically apply in every case. Each privately held company should be analyzed to determine if a size premium is appropriate in its particular case. There can be unusual circumstances where a small company has risk characteristics that make it far less risky than the average company, warranting the use of a very low equity risk premium. One possible example of this is a private water utility (monopoly situation, very low risk, near-guarantee of payments).[34]

[33] Annie Wong, "Utility Stock and the Size Effect: An Empirical Analysis," *Journal of the Midwest Finance Association*, (1993), p.98.
[34] Michael A. Paschall and George B. Hawkins, "Do Smaller Companies Warrant a Higher Discount Rate for Risk?: The 'Size Effect' Debate," *CCH Business Valuation Alert*, Vol. 1, Issue No. 2, December 1999.

Q. Has the Commission previously ruled on the issue of firm size and whether it warrants a risk premium adjustment to the cost of equity?

A. Yes. The Commission previously ruled in Decision No. 64282[35] for Arizona Water that firm size does not warrant recognition of a risk premium stating, "We do not agree with the Company's proposal to assign a risk premium to Arizona Water based on its size relative to other publicly traded water utilities...." The Commission confirmed its previous ruling in Decision No. 64727[36] for Black Mountain Gas agreeing with Staff that "the 'firm size phenomenon' does not exist for regulated utilities, and that therefore there is no need to adjust for risk for small firm size in utility regulation." All companies have firm-specific risks; therefore, the existence of unique risks for a company does not lead to the conclusion that its total risk is greater than other entities. Moreover, as previously discussed, investors cannot expect compensation for firm-specific risk since it can be eliminated through diversification.

XI. CONCLUSION

Q. Please summarize Staff's recommendations.

A. Staff recommends that the Commission adopt a 9.6 percent overall rate of return for the Company based on a capital structure composed of 0.0 percent debt and 100.0 percent equity, Staff's 9.0 percent cost of equity estimate, and Staff's 60 basis point (0.60 percent) upward economic assessment adjustment.

Q. Does this conclude your direct testimony?

A. Yes, it does.

[35] Dated December 28, 2001.
[36] Dated April 17, 2002.

Verde Santa Fe Wastewater Company Cost of Capital Calculation
Capital Structure
And Weighted Average Cost of Capital
Staff Recommended and Company Proposed

[A]	[B]	[C]	[D]
Description	Weight (%)	Cost	Weighted Cost
Staff Recommended Structure			
Debt	0.0%	0.0%	0.0%
Common Equity	100.0%	9.6%	9.6%
Weighted Average Cost of Capital			9.6%
Company Proposed Structure			
Debt	0.00%	0.00%	0.00%
Common Equity	100.00%	11.00%	11.00%
Weighted Average Cost of Capital			11.00%

[D] : [B] x [C]

Supporting Schedules: JAC-2, JAC-3 and JAC-4.

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Verde Santa Fe Wastewater Company Cost of Capital Calculation
Final Cost of Equity Estimates
Sample Water Utilities

[A]	[B]	[C]		[D]		[E]
DCF Method		D_1/P_0 [1]	+	g [2]	=	**k**
Constant Growth DCF Estimate		2.9%	+	5.7%	=	8.6%
Multi-Stage DCF Estimate					=	9.4%
Average DCF Estimate						**9.0%**
				Staff's Estimated Cost of Equity		**9.0%**
				Economic Assessment Adjustment		0.6%
				Sub-Total		**9.6%**
				Financial Risk Adjustment		0.0%
				Total		**9.6%**

1 MSN Money and Value Line

2 Schedule JAC-8

Verde Santa Fe Wastewater Company Cost of Capital Calculation
Average Capital Structure of Sample Water Utilities

[A]	[B]	[C]	[D]
Company	Debt	Common Equity	Total
American States Water	43.3%	56.7%	100.0%
California Water	54.2%	45.8%	100.0%
Aqua America	55.2%	44.8%	100.0%
Connecticut Water	55.3%	44.7%	100.0%
Middlesex Water	43.1%	56.9%	100.0%
SJW Corp	56.2%	43.8%	100.0%
York Water	45.0%	55.0%	100.0%
Average Sample Water Utilities	**50.3%**	**49.7%**	**100.0%**
Verde Santa Fe - Actual Capital Structure	**0.0%**	**100.0%**	**100.0%**

Source:
Sample Water Companies from Value Line

Verde Santa Fe Wastewater Company Cost of Capital Calculation
Growth in Earnings and Dividends
Sample Water Utilities

[A]	[B]	[C]	[D]	[E]
Company	Dividends Per Share 2003 to 2013 DPS[1]	Dividends Per Share Projected DPS[1]	Earnings Per Share 2003 to 2013 EPS[1]	Earnings Per Share Projected EPS[1]
American States Water	5.6%	7.1%	14.8%	3.8%
California Water	1.3%	8.9%	4.5%	10.2%
Aqua America	7.6%	10.2%	9.6%	6.0%
Connecticut Water	1.7%	3.4%	3.7%	2.9%
Middlesex Water	1.5%	1.5%	5.1%	3.6%
SJW Corp	4.1%	5.4%	2.8%	7.5%
York Water	4.1%	6.1%	4.8%	8.8%
Average Sample Water Utilities	**3.7%**	**6.1%**	**6.5%**	**6.1%**

1 Value Line

Verde Santa Fe Wastewater Company Cost of Capital Calculation
Sustainable Growth
Sample Water Utilities

[A]	[B]	[C]	[D]	[E]	[F]
Company	Retention Growth 2002 to 2012 br	Retention Growth Projected br	Stock Financing Growth vs	Sustainable Growth 2002 to 2012 br + vs	Sustainable Growth Projected br + vs
American States Water	3.8%	5.2%	1.5%	5.3%	6.8%
California Water	2.6%	3.4%	1.7%	4.2%	5.1%
Aqua America	4.0%	5.2%	1.8%	5.8%	7.0%
Connecticut Water	2.0%	3.6%	4.2%	6.2%	7.8%
Middlesex Water	1.3%	2.8%	3.0%	4.2%	5.7%
SJW Corp	3.3%	3.8%	0.1%	3.5%	3.9%
York Water	2.2%	3.7%	4.6%	6.8%	8.3%
Average Sample Water Utilities	**2.7%**	**4.0%**	**2.4%**	**5.2%**	**6.4%**

[B]: Value Line
[C]: Value Line
[D]: Value Line, MSN Money, and Form 10-Ks filed with the Securities and Exchange Commission (http://www.sec.gov/)
[E]: [B]+[D]
[F]: [C]+[D]

Verde Santa Fe Wastewater Company Cost of Capital Calculation
Selected Financial Data of Sample Water Utilities

[A]	[B]	[C]	[D]	[E]	[F]	[G]
Company	Symbol	Spot Price 1/15/2014	Book Value	Mkt To Book	*Value Line* Beta β	Raw Beta βraw
American States Water	AWR	**27.42**	11.98	2.3	**0.65**	0.45
California Water	CWT	**22.49**	11.78	1.9	**0.60**	0.37
Aqua America	WTR	**22.78**	8.08	2.8	**0.60**	0.37
Connecticut Water	CTWS	**34.93**	14.08	2.5	**0.75**	0.60
Middlesex Water	MSEX	**20.48**	12.14	1.7	**0.75**	0.60
SJW Corp	SJW	**29.04**	15.38	1.9	**0.85**	0.75
York Water	YORW	**20.87**	8.28	2.5	**0.70**	0.52
Average				**2.2**	**0.70**	**0.52**

[C]: Msn Money

[D]: Value Line

[E]: [C] / [D]

[F]: Value Line

[G]: (-0.35 + [F]) / 0.67

Verde Santa Fe Wastewater Company Cost of Capital Calculation
Calculation of Expected Infinite Annual Growth in Dividends
Sample Water Utilities

[A]	[B]
Description	g
DPS Growth - Historical[1]	3.7%
DPS Growth - Projected[1]	6.1%
EPS Growth - Historical[1]	6.5%
EPS Growth - Projected[1]	6.1%
Sustainable Growth - Historical[2]	5.2%
Sustainable Growth - Projected[2]	6.4%
Average	**5.7%**

1 Schedule JAC-5

2 Schedule JAC-6

Verde Santa Fe Wastewater Company Cost of Capital Calculation
Multi-Stage DCF Estimates
Sample Water Utilities

[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]
Company	Current Mkt. Price (P_o)[1] 1/15/2014	Projected Dividends[2] (Stage 1 growth) (D_t) d_1	d_2	d_3	d_4	Stage 2 growth[3] (g_n)	Equity Cost Estimate (K)[4]
American States Water	27.4	0.78	0.82	0.87	0.92	6.5%	9.3%
California Water	22.5	0.68	0.71	0.76	0.80	6.5%	9.4%
Aqua America	22.8	0.60	0.63	0.67	0.71	6.5%	9.1%
Connecticut Water	34.9	1.01	1.06	1.12	1.19	6.5%	9.3%
Middlesex Water	20.5	0.78	0.83	0.88	0.93	6.5%	10.3%
SJW Corp	29.0	0.77	0.82	0.86	0.91	6.5%	9.1%
York Water	20.9	0.58	0.61	0.65	0.68	6.5%	9.2%
						Average	**9.4%**

$$P_0 = \sum_{t=1}^{n} \frac{D_t}{(1+K)^t} + \frac{D_n(1+g_n)}{K-g_n}\left[\frac{1}{(1+K)}\right]^n$$

Where : P_0 = current stock price
D_t = dividends expected during stage 1
K = cost of equity
n = years of non – constant growth
D_n = dividend expected in year n
g_n = constant rate of growth expected after year n

1 [B] see Schedule JAC-7

2 Derived from Value Line Information

3 Average annual growth in GDP 1929 - 2012 in current dollars.

4 Internal Rate of Return of Projected Dividends